Academiarum Examen,

OR THE

EXAMINATION OF ACADEMIES.

Wherein is discussed and examined the Matter, Method and Customes of Academick and Scholastick Learning, and the insufficiency thereof discovered and laid open;

As also some Expedients proposed for the Reforming of Schools, and the perfecting and promoting of all kind of Science.

Offered to the judgements of all those that love the proficiencie of Arts and Sciences, and the advancement of LEARNING.

By *Jo. Webster.*

In moribus et institutis Academiarum, Collegiorum, et similium conventuum, qua ad doctorum hominum sedes, & operas mutuas destinata sunt, omnia progressui scientiarum in ulteriùs adversa inveniri. Franc. Bacon. de Verulamio lib. de cogitat. & vis. pag. mihi 14.

LONDON,

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To the Right Honourable Major General LAMBERT.

RIGHT HONORABLE,

I Present not these rude lines, thereby to beg protection; for if they be not able to stand of themselves, I desire they should not be supported by others; but onely because some years agoe a short draught of them was brought to your hands, and your Honour was then pleased to judge it worthy of your view and consideration, which makes me bold to mind you of what then I intimated unto you, which was and is thus much, That seeing divine Providence hath made you (with the rest of those faithfull and gallant men of the Army) signally instrumental, both in redeeming the English Liberty, almost drowned in the deluge of Tyranny and self interest, and also unmanacling the simple and pure truth of the Gospel, from the chains and fetters of cold and dead Formality, and of restrictive and compulsary Power, two of the greatest blessings our Nation ever yet enjoyed, I hope the same Providence will also direct you to be assistant to continue the same, against all the bitterness and cruelty of those, who, having obtained liberty for themselves, care not though others be bound up and persecuted, And moreover guide

you to ſet to your hand and endeavour for the purging and reforming of Academies, *and the advancement of* Learning, *which hitherto hath been little promoted or look'd into. And I am the more imboldned in this confidence, having experimental knowledge and trial, not onely of your Honours Abilities that way, but alſo of your ſincere affection and unparalleld love to* Learning, *and to all thoſe that are lovers and promoters thereof; which have been the principal motives to incite me to tender this rude Eſſay, and theſe few unpoliſh'd lines to your profound and mature judgement, which, beſides the good will of the Author, have little in them worthy your deliberate conſideration: Yet I ſuppoſe, if rightly weighed and examined, there will appear ſomething in them of neceſſary conſequence for the promoting of* Learning, *or at leaſt to ſtir up ſome more able wits to make a ſcrutiny into theſe things that are here controverted, which is the greateſt aim of my flagging deſires. But leſt while I ſpeak for truth and Learning, I may ſpeak my ſelf inſtead thereof, which is natures epidemical diſeaſe, and in not glorying may ſeem to glory, I only leave them to your Honours cenſure, and my ſelf*

October 21. 1653.

Your Honours devoted ſervant,
Jo. Webſter.

To all that truly love the Advancement of Learning in the Universities of Cambridge *and* Oxford, *or elsewhere.*

GENTLEMEN,

THough my *Stoical* and rigid humor might rather have induced me to have practised that severe Maxim, That men in publishing their writings should neither make use of fear nor care, as having that sufficient testimony in their own breasts of the sincerity of their intentions, and the perspicuity, certainty and utility of those things they divulge, that they need not fear their pains shall want protection, nor care for or fear the censures of men; Yet knowing I have to deal with Creatures more humane, civil, debonayre and ingenuous than the many-headed multitude, out of tenderness to give any jnst scandall or offence, and out of care to give all candid and free spirits the ultimate content that lies in my power, I will give some few reasons of this my present undertaking, especially considering that he who goes about to censure and refute the opinions of others, cannot but stand in need of an Apology for himself.

Some, I make no doubt, will at the first sight of this artless *Rapsody*, look upon me as some

Goth

Goth or *Vandal*, *Hunne* or *Scythian*, coming like a torrent from the *Boreal* and barren mountains of cold stupidity and dark ignorance, violently labouring to bring a deluge or inundation upon all the pleasant Gardens of Arts and Sciences, and to make an universal Conquest of all the flourishing Kingdomes of antient and long-esteemed Literature, thereby to erect the Monarchy of feral bruitishness and savage *Barbarism*. Well, whatsoever they may or can think or say of me, I am sure they cannot more experimentally and *Apodictically Anatomize* mine *Idiocrasie* than my self, nor be better acquainted with my weakness, nescience, ignorance & errors than I am my self, and I have truly more to say against my self than all the world can say of me or by me; yet if I may be thought to know the interior motions and intentions of mine own heart better than others, then I can truly and cordially testifie, that my soul is altogether inscious and innocent of any such purpose. Doubtless I may through mistake and want of ability to discern what is truth, and what is falshood, what is true learning, and what is but opiniative, painted and seeming, misse the way, and shoot far from the mark; yet hath my will and affections no other end but onely to hold out what is *Homogeneous* to truth, and of real tendency to advance Science.

Others may imagine that confidence of self-sufficiency, or hope of fame and vain glory, to be said to have attempted great things; or like *Scaliger* with *Cardan* to think to gain credit, to intermeddle with the splendor of the great name

of

of *Aristotle*; or to be so audacious, being but as an *Ant* or *Pygmie*, to undertake to combate with the Sons of *Anac*, in entring so boldly upon an Examination of the *Academies*, which are, and have been the Fountains of Learning, have been the motives that have had the most principal impulse upon my spirits in this interpriz; or that in the vain confidence of my abilities in *Oratory*, I have plaid but *Agrippa*'s Ape, to make a *declamation* against the *approv'd Scholastick learning* thereby to be accounted more learned: To these I plainly answer, my *own breast* is mine own *Sanctuary* & let them judge what they please, for if affection to simple and naked truth had had no more influence upon my spirit than desire of fame and repute, I could have been willing to have been silent untill I had been returned into that universal silence into which all must goe; and if I be not guilty of too much dubitation with *Pyrrho*, I am not culpable of too much confidence with *Aristotle*. But I must needs confess, as I never attempted any adversary through the incouragement of his weakness, so I never feared any because of his opposed strength; those that teach in the *Academies* are but as others, and *homo* is a common name to all men.

And if these men *understood* that I know better how to live without the most men in the World, than many in the world know how to live without me, they would never have judged me by their own measure, nor have imagined that either fear or favour, repute or disrepute, could have drawn me to this undertaking. And my un-

unskilfulness in *Oratory* is so sufficiently manifest in these unelegant lines, as it cannot be of much weight to beget a belief of gaining credit by that means, whereof I am absolutely conscious I am utterly void; and if *Agrippa* have done well, why should I be troubled to be accounted his imitator?

Others will look upon me as an absolute *Leveller*, and imagine that I would but have the Tree digged up by the roots, that if I get none of the main timber, yet I may have some of the tops, or at least to warm my self with the chips; And will say, that as the *Presbyters* rooted out the *Episcopants*, yet it was but to gather the Tythes into their own Barns; and as the *Independents* dismounted the *Presbyterians*, yet it was but to ride in their saddle: so we that talk of reforming the *Academies* and *Schools*, do it but that we might divide some of the spoil, or step into the places of those that are turned out. Wel, it is an easie exposition to expound other mens aymes by their own, and to judge what others intend to do, because we our selves have either done or intend to do the like in like cases; but facility and verity are not alwaies twins, others are not necessarily corrupt because we are so, minds as well as faces may have the same difference. But however I must needs so far own *Levelling*, that I hold plain dealing to be a jewel, and he that loves rugged, knotty and uneven paths may chuse them for me, I shall not willingly follow him therein; smooth and plain waies to me seem more amiable, secure, and comfortable

fortable. For the *Prelacy* though it ſought to bow me, yet it could not break me; though the *Presbyterian* pride did ſeem to threaten me, yet it could not hurt me, and the *Independent* forms could never inform me beyond the baſis of a better building than man can erect: nor can the ſpoil of *Academies* ever pleaſe my mind, nor ſhall fill my purſe. And therefore I would have ſuch to know that I am no *Dean* nor *Maſter*, *Preſident* nor *Provoſt*, *Fellow* nor *Penſioner*, neither have I tyths appropriate, nor impropriate, augmentation, nor State pay, nor all the levelling that hath been in theſe times, hath not mounted nor raiſed me, nor can they make me fall lower, *Qui cadit in terram, non habet unde cadat.* And he that would raiſe himſelf by the ruins of others, or warm himſelf by the burning of *Schools*, I wiſh him no greater plague than his own ignorance, nor that he may ever gain more knowledge than to live to repent.

Some alſo will inquire who, and what I am, how bred and educated, that I dare be ſo audacious and inſolent to examine and oppoſe that learning, which hath been received and approved for ſo many years, aſſented unto, and extolled by ſo many great wits and profound judgements, and defended, and patronized by all the *Academies* in the Univerſe: and will think it fit I ſhould give an account of my ſelf, that the world may judge of mine abilities, leſt my ſhoulders be found too weak to ſupport ſo ponderous a burthen. To all which I might return this, *Si reſpondere noluero, quis Coacturus*

 ſit?

fit? yet ſhall I not be ſo *Cynical*, but plainly tell them that *Hercules* is eaſily known by his foot, and the Lion by his paw, the Treatiſe it ſelf will ſufficiently ſpeak both my ſtrength and weakneſſe, my ſcience and ignorance, and cauſes are beſt known by their effects, and the tree by its fruits, and therefore they need no cleerer rules, or means to judge by, than the things herein laid down. And if I know little (as I am moſt conſcious that I only know this, that I know nothing at all, at leaſt as I ought to know) let not my education be blamed, but my negligence and ſtupidity, though I muſt confeſs I ow little to the advantages of thoſe things called the goods of fortune, but moſt (next under the goodneſs of God) to induſtry: However, I am a free-born *Engliſhman*, a Citizen of the world, and a ſeeker of knowledge, and am willing to teach what I know, and learn what I know not, and this is ſufficient ſatisfaction to modeſt inquirers.

Furthermore, ſome may object and ſay, that this Treatiſe is but like *Plato's Republick*, *Sir Thomas Moor's Utopia*, or the Lord *Bacon's* new *Athlantis*, fraught with nothing but *Heterodoxal* novelties, and imaginary whimſeys, which are not to be imitated, and are meerly unpracticable. To this I anſwer, that phantaſtical heads may very well be filled with ſuch roving thoughts, and conceited crotches, yet I would have them to know that in *Plato's Commonwealth*, and *Sir Thomas Moor's Utopia*, are more excellent things contained than figments

ments and impoſſibilities, though the general blindneſs, and curſe upon the Sons of *Adam* keep them frō ſeeing or practiſing any thing that may break the yoak or remove the burthen: and for the *arcana et magnalia naturæ*, aimed at by *Sir Francis Bacon*, they might be brought to ſome reaſonable perfection, if the waies and means that he hath preſcribed, were diligently obſerved, and perſued; and if theſe poor lines of mine contained but any treaſure comparable to any of their rich mines, I ſhould ſet an higher Character of eſteem upon them, than now I ought, or they any way merit. And it is true, that ſuppoſed difficulty, and impoſſibility, are great cauſes of determent from attempting, or trying of new diſcoveries, and enterpriſes, for the ſloathful perſon uſually cryeth, go not forth, there is a Lion or Bear in the way; and if *Columbus* had not had the ſpirit to have attempted, againſt all ſeeming impoſſibilities, and diſcouragements, never had he gained that immortal honour, nor the *Spaniards* been Maſters of the rich *Indies*, for we often admire why many things are attempted which appear to us as impoſſible, and yet when attained, we wonder they were no ſooner ſet upon, and tried, ſo though the means here preſcribed may ſeem weak and difficult to be put into uſe, yet being practiſed may be found eaſy and advantagious. And I hope newneſs need not be a brand to any indeavor, or diſcovery, ſeeing it is but a meer relative to our intellects, for that, of which we were ignorant, being diſcovered to us, we call

new, which ought rather to mind us of our imbecillity and ignorance, than to be any ſtain or ſcandal to the thing diſcovered, for doubtleſly he ſaid well that accounted *Philoſophy* to be that, which taught us *nihil admirari*, and admiration is alwaies the daughter of ignorance.

And if ſome ſhall allege that here is nothing mine own but what is gleaned and collected from others, and ſo is nothing elſe but a tranſcription, and that if every bird take her own feather, I ſhall be but left naked and bare. Well, ſuppoſe all this be true, and that *nihil dictum quod non prius*, yet is this no more blameable in me than in others, for I confeſs the moſt of the Arguments I have uſed have been borrowed from thoſe learned Authors whoſe names I have uſed, or whoſe writings I have cited, yet are there many things alſo of mine own, at leaſt the methode and manner of arguing, ſo that I may ſay with *Macrobius*, *omne meum, nihil meum.* And if the things therein contained be hinted at and taught by others, then I only am not *Paradoxal* but they alſo, and I have produced their teſtimony, that the world may ſee how many valiant champions have ſtood up to maintain truth againſt the impetuous torrent of antiquity, authority and univerſality of opinion; and though they be not ſo numerous, yet are they no babes, but ſtrong men, who fight not with the plumbeous weapons of notions, *Syllogiſm*, and putation, but with the ſteely inſtruments of demonſtration, obſervation, and experimental induction, ſo that I hope I ſhall

not

not be accuſed of novelty and ſingularity, ſeeing I have ſo many noble *Heroes* to bear me company.

However I may be cenſured, I intend not to aſperſe the perſons of any, nor to traduce nor calumniate the *Academies* themſelves, but only the corruptions that time and negligence hath introduced there, but ſimply to attempt (according to my beſt underſtanding) ſome reformation, not eradication of their cuſtomes, and learning, which though I have (peradventure) but weakedly mannaged, yet I hope my poor mite, with the candid and ingenuous will be accepted, and for the reſt I value them not, and I intreat the more able to ſupply what my want of ſtrength hath left incompleat, and imperfect.

Laſtly, I have rather intended this as an eſſay to break the ice to ſome more able judgement, than as ſufficient of it ſelf to perform what is aimed at, becauſe I have neither performed what I ſhould have done, nor what I could, but only traced out ſome few cleer things as a guide to higher and more noble undertakings: In a word, if I have ſaid or done any thing that may truely advance Science, I have mine end, if otherwiſe, blame the weakneſs, not the will of him, who ſubſcribes himſelf,

Octob. 21.
1653.

Servant to all thoſe that truely love Learning.

Jo. WEBSTER.

Sa-

Sagaciſſimo et doctiſſimo Viro Johanni Webſterio carmen Acroſticon et Encomiaſticon.

J *In an* Ægyptian *darkneſſe men do live,*
O *'recome with* Fancies *which the Schoolmen give;*
H *High-building-Tower men, who ſuch notions make,*
N *Nothing but* Babel *we from them can take.*

W *Weave now ſuch damask,* Webſter, *that this age*
E *Eternize may thy Name with th'* Græcian *Sage.*
B *Build Thou a* School, *whoſe ſtrong foundation may*
S *Sacred remain, when Thou art laid in Clay.*
T *Time then ſhall write in brazen ſheets Thy Fame,*
E Englands *Guard-Angel ſhall preſerve Thy Frame,*
R *Rebuking Schoolmen with Thy very Name.*

R. H. N. & Medicus.

To

To the Reader concerning this Book, and his Worthy Friend, the Composer of it.

WHo fears the same of Academick *Sense*
Must blame this Author, saying, a bonny sconce
Is fitter for him, than a weed that springs
In any Grove, that's shadowed by the wings
Of Pegasus, *that nimble Horse that runnes*
Among the Goths, *the* Vandals, *and the* Hunnes;
But we are Christians, *say the men that bottle*
All their Extractions out of Aristotle;
We are the men that must amuze the world
With what He hath broach'd, and still amongst us hurl'd:
But here's a man that tells the truth indeed,
And shewes our Human Learning but a weed,
A dream of yesternight, and no such thing
As men from Oxford, *or from* Cambridge *bring.*
Reader consider what he saies, and mark
What Artifice of mischief lyes i'th' dark,
How Ignorance hath brav'd it out, and still
Goes veil'd and mask'd under the name of Skill;
How men pretend to that which is Divine,
And yet discern not what is but Humane.
How earnest should we be, and valiant then
Against those Idols of the times, who when
They know not God, or what is taught by him,
Would yet in lower waters drink and swim
Of Human Learning? But how vain and odd
Is his conceit, that knowes neither man nor God,
And yet would fain perswade the world that he
Can handsomely unfold each mystery?
Away with fond conceits, let us lament
Our not perceiving what may us content,
Which lies not in the Creatures view, much less
Can any see it, who themselves do bless,
In groping after that which men enhaunce,
And yet what is it, but meer Nescience?
Well-fare the Author of this learned Book,
Whose pains from us frauds of this nature took.

φιλόθεος, φιλάληθης, φιλάριστος. *J. C. A. M.*

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ACADEMIARUM EXAMEN, OR THE EXAMINATION OF ACADEMIES:

CHAP. I.

Of the general ends of erecting publick Schools.

IT is a truth clearly evidential to all, who in a ſmall meaſure have but convers'd with Hiſtory, or are not abſolute Infidels againſt the fidelity and facts of former ages, that there have been few Nations ſo feral and ſavage, who have not honoured literature, and in ſome way or other have not inſtituted means for the propagating of Learning. Which is ſufficiently witneſſed by the moſt Nations of note; for the *Indians* had their *Brachman's*, and *Gymnoſophiſts*; the *Perſians* their *Magusæi*, or *Magicians*; the antient *Gaules*, and *Britaines* their *Druides*; the *Jewes* their *Rabbies*, both *Cabaliſts* and *Talmudiſts*; and the *Græcians* their *Maſters* and *Philoſophers*. The *Ægyptians* alſo had their *Prieſts*, who were men of great learning, and did but account of the *Gra-*

cians in point of knowledge as children, as one of them objected, *Vos Graci semper estis pueri*; and this was that great learning, which *Moses* being skilled in, is commended by *S. Stephen*, *καὶ ἐπαιδεύθη Μωσῆς πάσῃ σοφίᾳ Αἰγυπτίων*, *and Moses was instituted from a boy in all the learning of the Ægyptians.*

Act. 7. 22.

Now these had their *Gymnasia* or publick *Schools*, wherein they instructed their youth, as *Apollonius Tyaneus* witnesseth of the *Indians*, and so S^t. *Paul* testifieth of himself, *that he was brought up at the feet of Gamaliel*. And doubtless in imitation of these *Eastern* Nations the *Gracians* erected their *Schools*, and *Academies*; for *Pythagoras*, *Democritus*, *Socrates*, *Plato* and others, having travelled into forein parts, to participate of their knowledge, and returning home abundantly inriched therewith, did open their *Schools* to instruct their Countrimen, and to let them in some measure taste of the sweet fruit of their far-fetched and dear-bought Science. Yet had they not (as far as I can gather) any publick salaries, but their merit was their maintenance, and their excellency in arts, and diligent industry, the only Trumpet to blow abroad their fame, and to procure them both advancement, and auscultators,

Philostrat. in vitâ Apoll. Tyan.

Act. 22. 3.

I shall not need to enlarge my self to speak of their antiquity, or the commendable ends of their first erection, it being manifest that the chief ends, in the institution of them amongst the Heathen, were first to inable men for their undertaking in the Commonwealth; and secondly to fit them for the service, or worship of their *Idols*, and imaginary gods; which ends (though diversified in the object) were (in all probability) the same that *Christians* aymed at in setting up their *Schools* and Universities: The first of which was good, *Politick*, usefull and profitable, inabling men for all kind of undertakings, both military and civil, without which men do not much differ from brute animants; the perfection of which is the greatest acquisition that men in this frail life can be partakers of, and in comparison of which all other worldly treasures are but as vapours and emptiness.

But the other end, namely by these acquirements to fit

and

and inable men for the Ministry, and thereby to unlock the sealed Cabinet of the counsel of God (as it hath been commonly received in judgement, and used in practice) hath not onely failed of the principal end aimed at, but been quite contrary and opposite thereunto. For every thing stretched and elevated beyond its own proper sphear and activity, becomes not onely vain and unprofitable, but also hurtfull and dangerous: *Boni oculi, & usui necessarii, sed cum sine lumine aspicere volunt, nihil eis species proficit, nihil propria vis, sed affert nocumentum, The eies are good, and necessary for use, but when they will see without light, the species of things doth not profit, their own vertue doth not profit, but bring nocument:* So humane knowledge is good, and excellent, and is of manifold and transcendent use, while moving in its own orb; but when it will see further than its own light can lead it, it then becomes blind, and destroyes it self. So if the *Academies* had kept within their own sphear, and onely taught humane science, and had not in pride and vain glory, mounted into the Chariot of the Sun like *Phaeton*, they had then neither disordered nor injured *Theologie* that is above them, nor the things of nature, which they account below them; nor had they attempted to *send labourers into the Lords Vineyard*, which none but he himself alone can do; nor been negligent in that burthen, and labor, that was peculiar unto them, and incumbent upon them. And to cleer this we shall only touch some few arguments, because elsewhere we have said more.

Chrysostome in epist ad Cor. 1. cap. 2. Hom. 6. 7.

Mat. 9. 38.

1. The chief scope and drift of the Gospel is to humble the proud, and towering imaginations of lost man, and to let him see that he is (notwithstanding the excellency of all his acquisitions) utterly blind, and knows nothing as he ought to know. And so while this vain tradition pretends to enable man to understand the mysteries of the Gospel, it makes him (through confidence in his attainments) uncapable of being taught them, as *Jobs friend* truly said, *vain man would be wise, though he be born as a wild asses Colt.* *Tantò sit quisque vilior Deo, quantò pretiosior sibi, tantò*

Iob. 11. 12. Gregor. li. 28 Moral.

pretiosior deo, quantò propter eum vilior sibi, Every one becomes so much more vile unto God, by how much more he is precious unto himself, so much more precious unto God, by how much more because of him he is vile unto himself.

2. The end of the Gospel is to discover the *wisdome of the world* (in the height of its purity and perfection) *to be meer foolishness*, that so it may not be ballanced or compared with those divine raies of Cælestial light that the Spirit of God reveals in and unto man. *Hæc tota est scientia magna hominis scire, quia ipsa nihil est per se, & quoniam quicquid est, ex deo est, et propter deum est, This is the whole knowledge of man, to know that it is nothing of it self, and that whatsoever it is, it is of God, and for God.* But this opinion makes man confidently *walk on in the light of his own sparks, and by the fire that he hath kinkled unto himself*, and to prize it above the glorious and given light of the Spirit of Grace, and therefore (as saith the Prophet) *to ly down in sorrow. Ad veram sapientiam pervenire non possunt, qui falsæ suæ sapientiæ fiduciâ decipiunt, Those can never attain unto true sapience who deceive themselves in the confidence of their own false wisdome.*

1 Cor. 1. 19, 20

Augusti. sup. Psal. 70.

Isa. 50. 11.

Greg. lib. 9. Moral.

3. The teaching of spiritual and Gospel knowledge is onely and peculiarly appropriated and attributed unto the Spirit of God, *It is neither of man, nor by man, flesh and blood reveals it not, but the Father which is in heaven; and every Scribe fit for the Kingdome of heaven is taught of God. Doctus autem scriba, qui Magisterium universalis scientiæ adeptus, habet thesaurum, de quo proferre potest nova et vetera, For the taught Scribe, who having attained the Magistery of universal science, hath a treasury out of which he can bring new things and old.* Now this tenent doth attribute it to a fleshly power, contrary to the truth of God, which denies it to be in the power of humane acquisition. *The natural man receiveth not the things of the Spirit of God, for they are foolishness unto him: neither can he know them, because they are spiritually discerned.*

Gal. 1. 1. 12. Mat. 16. 17. Job 6. 45.

Nich. de cusa. de filiatione dei.

1 Cor. 2. 14.

4. The

4. The weapons and instruments of a minister of the Gospel are of a more transcendent and sublime nature, than those that one man can furnish another withall, they are *not carnal, but spiritual, not mighty through us or our power, but through Christ*, not for the elevating and blowing up, *but for the pulling down of strong holds, casting down imaginations, & every thing that exalteth it self against the knowledge of God, and bringing into captivity every thought to the obedience of Christ.* Now is it not manifest that all the Science that men or Schools can teach is but carnal, and tends to exalt & not pull down the imaginations of man? and therefore true of them, as one of the Antients said, *Nugas tenemus, et fonte veritatis amisso, opinionum rivulos consectamur, We hold trifles, and the fountain of verity being lost, we follow the rivulets of opinions.*

2 Cor. 10 4, 5. Vid. Chrysost. Sup. loc. Hieronim. in epist. de duobus filiis.

5. The Apostles and Disciples neither taught nor practised any such matter, but bad us *beware of Philosophy, which is after the rudiments of the World, and not after Christ:* Nay the Apostle forbad us even to speak or declare the things of Christ in *the wisdome of mens words*, because thereby *the cross of Christ is made of none effect*, and thereby mens *faith doth but stand in the wisdome of man, and not in the power of God.* There is a very remarkable and appositе relation recorded by *Chrysostome* of two men disputing, the one a Christian, the other an heathen, and the question betwixt them was, whether *Paul* or *Plato* were more eloquent, the Christian arguing for St. *Paul*, and the heathen for his master *Plato*, of whom he affirms that the Christian had the argument that belonged to the heathen, and the heathen that which belonged to the Christian, and draweth this conclusion. *Si Platone disertior Paulus fuisset, multi non immeritò asserere potuissent, non gratiâ vicisse Paulum, sed facundiâ; ex quo satis constat, non in sapientiâ humanâ prædicationem factam esse, sed in divinâ gratiâ.* If Paul *had been more eloquent than* Plato, *many not unworthily might have asserted, that* Paul *had been Victor, not by grace, but facundity, from whence it is sufficiently manifest that the preaching of the Gospel was not made in the wisdom*

Col. 2. 8. 1 Cor. 1. 17. 1 Cor. 2. 4, 5. Chry. Hom. 3. in 1 ad Cor. cap. 1. v. 17.

dome of man, but in divine grace. Therefore is this teaching and practice contrary to the Apostles rule and canon.

6. All things that by the Spirit of Christ are revealed unto, or wrought in man, are for this end, to take away from the creature totally all cause and ground of boasting or glorying, and to give the glory to God solely, to whom it is due. *He that rejoiceth, let him rejoice in the Lord, and let no flesh glory in his presence. Non confidat prædicator, vel auditor verbi divini, de acumine ingenii, de subtilitate scrutinii, de sedulitate studii: sed magis confidat de bonitate dei, de pietate oraculi, de humilitate cordis intimi, Let not the Preacher or hearer of the divine word, trust in the acuteness of his wit, the subtilty of his scrutiny, the sedulity of his study: but rather let him trust in the goodness of God, in the piety of the oracle, in the humility of his inward heart.* But this tenent of *Schools* inabling men for the Ministery, teacheth man to glory in his gotten learning, and acquired parts, and so is contrary to the truth of Christ.

1 Cor. 1. 29, 31.

Hug. de sanct. Victor. in Didascalic.

Object. 1. To this I know it will be objected, That *Schools* teach the knowledge of tongues, without which the Scriptures (being originally written in the *Hebrew* and *Greek*) cannot be truly and rightly translated, expounded, nor interpreted: and therefore it is necessary that *Schools* and *Academies* should teach these, as properly and mainly conducible to this end. To which I shall give this free and cleer response.

Respons. 1. It is not yet infallibly concluded, either which are the true original copies (especially concerning the *Hebrew*, and the *Oriental* languages) the *Iewish* tongue having been often altered and corrupted by their several intermixtures with, and transmigrations into other Nations; or that they have been purely and sincerely preserved unto our hands. For Languages change and alter, as fashions and garments. *Multa renascentur, quæ nunc cecidere, cadentque*; Neither have we any thing to assure us in this point, but bare tradition and history, which are various, perplex, dubious, contradictory and deficient. And that it which in

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t self is dubious and uncertain, should be the means of manifesting the indubitable truth to others, seems not very probable or perswasive.

2. Knowledge of tongues can but teach the *Grammatical* construction, signification, and interpretation of words, propriety of phrases, deduction of *Etymologies*, and such like; all which tend no further than the instamping of a bare literal understanding, and all this may be, the mystery of the Gospel being unknown, for the letter killeth, but the Spirit giveth life. 2 Cor. 3 6. And *Saul* before his conversion, & the rest of the *Jewish Rabbies*, understood the *Hebrew* and *Greek* tongues, and yet by them understood nothing of the saving mystery of Grace, for *they stumbled at the stone of offence*, and though they were Princes in humane learning and wisdome, yet did they not know God in his divine wisdome, *for had they known it, they would not have crucified the Lord of Life.* 1 Cor. 2. 8. And therefore is not tongues the right key to unlock the Scriptures, but the Spirit of Christ, *that opens, and no man shuts, and shuts, and no man opens.* Rev. 3 7.

3. This is built upon no surer a foundation than a traditional faith, for *oportet discentem credere, every man must believe his Teacher*, & therfore hath no more in this but what is taught by man, who is not able to receive the things that are of God, for they are spiritually discerned. So that in this case he that understands the original tongues, in which the text was first written, conceives no more of the mind of God thereby, than he that only can read or hear read the translation in his Mothers tongue: For the reasons are every way pareil, and parallel; for what difference is there between him that relies upon his teachers skill, and he that relies upon the skill of a Translator, are they not both alike, since they are but both *testimonia humana*, full of errors, mistakes and fallacies?

4. The errors and mistakes that still remain, and are daily discovered in all translations, do sufficiently witness mens negligence and ignorance, that in the space of sixteen hundred years, have not arrived at so much perfection, as to compleat one translation, to be able to stand the hazard of

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all essaies, and as the *Herculean* pillar with a *ne plus ultra*; especially if unto this be added, the uncertainty (if not deceit) of all or the most Translations, men usually pretending skill in the Original tongues, do draw and hale the word to that sense and meaning that best suited with their opinions and tenents, which is cleer in *Arrius* and those others that men have branded with the name of hereticks, (how justly God knows) and in those that many do call *Fathers*, as *Origen*, *Ambrose*, and many such; and in these times the *Papists*, *Socinians*, *Arminians* (as men have given them names) and those that have appropriated unto themselves the name of being *Orthodox*: these all pretending exact skill in the original tongues, do all wrest the Scriptures to make good their several tenents, and traditional formes, which plainly demonstrates the uncertainty, if not vanity, in boasting of, and trusting in this fleshly weapon, of the knowledge of tongues.

5. Lastly, while men trust to their skill in the understanding of the original tongues, they become utterly ignorant of the true original tongue, the language of the heavenly *Canaan*, which no man can understand or speak, but he that is brought into that good Land that flowes with milk and honey, and there to be taught the language of the holy Ghost,
Jo. 3. 31, 32. for *he that is from heaven is heavenly, and speaketh heavenly things*, and all that are *from the earth, do but speak earthly things*: So that he that is most expert, and exquisite in the *Greek* and *Oriental* tongues, to him notwithstanding the language of the holy Ghost, hid in the letter of the Scriptures, is but as *Hiroglyphicks*, and *Cryptography*, which he can never uncypher, unless God bring his own key, and teach him how to use it, and otherwise the voice of Saints will but be unto him as the voice of *Barbarians*, *even as a sounding brass, and a tinkling Cymbal*, as not giving any *perfect or distinct sound*.

And therefore as nothing that I have spoken is intended against the learning and use of languages simply, so I am not averse to mens endeavours about the same, not their pains in perfecting translations, but could heartily wish it

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were ten times more: yet principally I would have men to know, that it is the Spirit of God onely that freely gives men to understand the mysteries of the kingdom of heaven, and if any good or benefit accrew unto the truth and Church of Christ by the knowledge of tongues or translations, it ariseth not from their excellency, but solely and onely from the mercifull operation of his Spirit, who worketh all and in all, and maketh *all things to co operate for the benefit of those whom he hath called according to his own purpose.* Rom 8. 28.

CHAP. II.

Of the division of Academick learning, and first of that called School-Theology.

THere are three things concerning *Academies*, that do obviously offer themselves to our examination; First, that Learning which is the subject of their labours. Secondly, their method in the teaching and delivering it unto others. Thirdly, their Constitutions and Customes, of which we shall speak in order; and first of that learning which they subjectively handle; for they very proudly, and vainglorioully pretending to make men *Doctors* in divers Sciences, and *Masters*, and *Batchelors* in or of Arts, it will be very necessary to consider what these Sciences and Arts are, in or of which men are by them made Masters, lest it prove that when men vainly boast, & imagine that they are Masters of arts, they be Masters of none, but rather ignorant of all or the most. It is no less ingenuous than true, which the learned *Renatus des Cartes* acknowledgeth of himself, That having been from his very young years stimulated with a mighty ardor and desire of knowledge, and having run thorough the course and Curricle of the *Scholastick* studies, after which by custome and order he was to be received into the number of the learned, even then (saith he) *Tot me dubiis totque erroribus implicatum esse adimadverti, ut omnes discendi conatus nihil aliud mihi profeciſſe judicarem, quàm quod ignorantiam me-* Differta. de Methodo. lib. pag. 3.

am magis magisque detexissem, I understood my self implicated with so many doubts and so many errors, that I did judge all my desires of learning to have profited me no more, than that more and more I had detected mine own ignorance. Memorable, faithfull, and vastly modest is that free confession of that miracle of learning *Baptista van-Helmont*, who when he had accomplished his course in *Philosophy*, and was to receive his degree of a Master of Arts, he begun to examine what a great *Philosopher* he was, and what science he had gained, saith, *Comperi me literâ inflatum, et veluti manducato pomo vetito planè nudum, praterquam quod artificiosè altercari didiceram. Tum primùm enotui mihi quod nihil scirem, et scirem quod nihili, I found my self puffed up with the letter, and plainly naked, as though I had eaten of the forbidden apple, except that I had learned artificially to chide. Then first it was known to me, that I knew nothing, and what I knew was of no value.* And therefore modestly makes this conclusion; *Peracto ergo cursu, cum nil solidi, nil veri scirem, titulum magistri artium recusavi; nolens, ut mecum morionem professores agerent, magistrum septem artium declararent, qui nondum essem discipulus, Therefore the course of my studies being finished, seeing I knew nothing of solidity, nothing of truth, I refused the title of Master of Arts, unwilling the professors should play the fool with me, that they should declare me Master of the seven Arts, who as yet was not a disciple, or taught.* And I could wish that all those that boast of being Masters of Arts had the true insight of their own self-insufficiency, then would they be more willing to learn, than to undertake to teach.

Lib. Stud. Author. pag. 16.

The first usual division of *Scholastick* learning is into Divine and Humane; the first of which they commonly stile by that improper and high-flown title of *School-Divinity*: and sometimes more modestly and aptly, *School-Theology*, and by some *Metaphysicks*, or *Natural Theology*, the Vanity, Vselessenesse, and Hurtfulnesse of which we shall shew in some few clear arguments.

First, the Vanity of it appeareth in this, that men and *Academies*

cademies have undertaken to teach that which none but the Spirit of Christ is the true Doctor of, and so contrary to the truth *call men teachers and masters upon earth*, when *we have but one father* (to teach these things) *which is in heaven*, and *one* true *Master* (who only can disciple us in these things) *even Christ*, and so ought not vainly (because of mans pretending to teach us those things in the ordinary way of humane teaching) to *be called, or to call one another Rabbies*; *for every good gift, and every perfect gift is from above, and commeth down from the father of lights, with whom is no variableness, neither shadow of turning.* I do not deny nor envy men the titles of being called Doctors and Masters for their knowledge in natural and civil things, and for to have a civil reverence and honour, but to have these titles given them as able, or taking upon them to teach spiritual things, is vanity and pride, if not blasphemy: For I must conclude with *Chrysostome*, *Omnis ars suis terminis non contenta, stultitia est*, *Every art not content with it own bounds*, is *foolishnesse*. And therefore sober and Christian-like is that conclusion of *Cartesius* speaking of *Theology*, *Sed cum pro certo et explorato accepissem, iter quod ad illam ducit doctis non magis patere quam indoctis, veritatesque à deo revelatas humani ingenii captum excedere, verebar ne in temeritatis crimen inciderem, si illas imbecilla rationis mea examini subijcerem, et quicunque iis recognoscendis, atque interpretandis vacare audent, peculiari ad hoc dei gratia indigere, ac supra vulgarium hominum sortem positi esse debere, mihi videbantur*, *But when I had received it for certain, and indubitable, that the path which leads unto it, is not more open to the learned than to the unlearned, and that the truths revealed of God do exceed the capacity of humane wit, I did fear lest I should fall into the crime of temerity, if I should subject them to the examination of my weak reason, and whosoever did attend the handling and interpreting of those things, did seem to me to stand in need of the peculiar grace of God for that work, and ought to be placed above the condition of vulgar men.* So that it is the proper and peculiar science and art of the holy Ghost, which

Matth. 23 9. James 3. 1.

Jam. 1. 13.

Chrysost. in Ep. ad Cor. 1. cap. 2. Hom. 7.

Renat. des Cartes in Method.

none can teach but God onely, *vid. Cusan, in Apol. doctæ ignorantiæ, Bapt. van Helm. in promiss. stud. author. et de venatione scientiarum, Paracels. lib. de fundamento scientiarum et sapientiæ, et in lib. de inventione artium, et alios.*

Secondly, from this putrid and muddy fountain doth arise all those hellish and dark foggs and vapours that like locusts crawling from this bottomlesse pit have overspread the face of the whole earth, filling men with pride, insolency, and self-confidence, to aver and maintain that none are fit to speak, and preach the spiritual, & deep things of God, but such as are indued with this *Scholastick*, & mans *idol-made-learning*, and so become fighters against God, and his truth, and persecutors of all those that speak from the principle of that wisedome, *that is from above, and is pure and peaceable:* not confessing the nothingnesse of creaturely wisedom, but magnifying, and boasting in that which is *earthly, sensual*, and *devillish*. *Frustra enim cordis oculum erigit ad videndum deum, qui nondum idoneus est ad videndum seipsum, For in vain doth he lift the eye of his heart to see God, who is not yet fit to see himself.* And therefore these thinking themselves wise, they become fools, and proudly taking upon them to teach others the things of God in the way of worldly wisdome, are not onely untaught of God, but are enemies to his heavenly wisdome. Excellent is that of the *Cardinal*, in his discourse between the *Doctor* and the *Idiot*, for the *Idiot* saith, *Hæc est fortassis inter te & me differentia, tu, te scientem putas, cum non sis, hinc superbis; ego verò idiotam me esse cognosco, hinc humilior, in hoc fortè doctior existo, This perhaps is the difference betwixt me and thee, thou thinkest thy self knowing, when thou art not, from hence thou art proud; I truly know my self to be an Idiot, from hence I am humbled, in this perhaps I am more learned.*

Iam. 3. 15. 17.

Hug. lib. 3 de Anima. cap. 6.

Nic. de Cusa. lib. idiotæ.

3. From this ariseth the dividing and renting of the seamless Coat of Christ, which is indivisible, and admits no schism, but must pass all one way, according to the lot of the Father. But how have they attomized the unity and simplicity

city of that truth? when there is but *one Body, and one Spirit, and one hope in the calling of all Saints: one Lord, one Faith, one Baptism, one God and Father of all, who is above all, and through all and in all.* For first they have proudly undertaken to define *Theologie*, as they have done other arts and sciences, and so make it *habitus acquisitus*, and attainable by the wit, power and industry of man, when it is peculiarly and onely *donum altissimi*, and meerly the fruit of grace, and that also *gratis datum*: and yet sometimes they divide Sciences into two sorts, Infusive, and Acquisitive, and number this as that which is infused, and yet not remembring their own *Dichotomy*, do vainly pretend to teach men that which is onely instilled and infused by the Spirit of God: and therefore might more exactly keep their own division, to have left that inspired knowledge, which is onely infused and given from above, to the teaching of the holy Ghost. And if they would have considered *Theologie* as natural, which is such a spark of knowledge as can be had of God by the light of nature, and the contemplation of created things, which in regard of the object may be called *Divine*, in respect of the information, *natural*, and so kept it within its own bounds, it were tolerable; for, *Hujus scientiæ limites ita verè signantur, ut ad Atheismum confutandum, & convincendum, & ad legem naturæ informandam, se extendant; ad religionem autem astruendã non proferantur, The limits of this science may be so truly assigned or set out, that they may extend themselves to the confuting and convincing of Atheism, and to teach the law or order of nature; but should not be brought forth to assert or build up Religion.*

Eph 3 4 5 6.

Francis. Bacon. de Verulam. lib. de aug scient. cap. 2.

Secondly, they have laid down positive definitions of God, who cannot be defined but by his own *Logick*, *for with him is the fountain of life, and it is in his light that we see light*: and their own rules teach them that there cannot be a perfect definition, where there is not a *proxime genus*; but he doth supereminently transcend all their whole prædicamental skale, nay *the heaven of heavens cannot contain him*, how much less the narrow vessell of mans intellect, or the weak

Psal. 36 9.

1 King 8. 27.

weak and ſhallow rules of *Logical* skill? and therefore if they had but humbly and modeſtly attempted no more, but what is attainable by the poor ſcintillary glimpſe of natural light, and have confeſſed the ſame conſtantly and freely, and that all their beſt deſcriptions of the immenſe and incomprehenſible one, were but infinitely weak and ſhort to make out his ineffable wiſdome, power, and glory, and ſo have uſed it but to convince *Atheiſts*, or to make manifeſt the Cauſe of Cauſes, and Being of Beings, and not thereby to have reared up an high-towring *Babell* of confuſed, notional, fruitleſs and vain religion, it might have paſſed without reproof, and the *Schoolmen* without condemnation. For if we could handle theſe high and deep myſteries of God, and his Spirit, then ought we to have not the *ſpirit of the world* (which is carnal wiſdome and reaſon) *but that Spirit which is of God, which ſearcheth all things, even the deep things of God, that we might know the things that are freely given to us of God*: and ſo to go out of our ſelves, and out of the weak and rotten veſſel of humane reaſon, into that ark of *Noah*, which guided by the divine *magnetick* needle of Gods Spirit, can onely direct us to reſt upon the mountains of *Ararat*, even upon himſelf in Chriſt Jeſus, *who is the rock of ages, and the ſtone cut out without hands, that cruſheth and breaketh in pieces all the ſtrong images* of mans wiſdome, power, ſtrength and righteouſneſs.

1 Cor. 2. 10, 12.

Gen. 8. 4.
Dan. 2. 34.

4. They have drawn *Theologie* into a cloſe and ſtrict *Logical* method, and thereby hedged in the free workings and manifeſtations of the Holy one of Iſrael, who by his Spirit *bloweth where he liſteth*, like *the wind*, and men *may hear the ſound thereof, but cannot tell from whence it cometh, nor whither it goeth*: as though the holy Ghoſt had not had an higher and more heavenly method and way to teach divine things in and by, than the art of *Logick* (which is meerly humane, and mans invention) ſeeing *the fooliſhneſs of God is wiſer than the wiſdome of men, and the weakneſs of God is ſtronger than men*, when indeed the Spirit of God hath a ſecret, divine and heavenly method of its own, and onely proper to it ſelf, which none can know but thoſe that are

Joh. 3. 8.

1 Cor. 1. 25.

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taught it of God, and therefore they onely understand it, and speak out the things of God, but not in the *words which mans wisdome teacheth, but which the holy Ghost teacheth, comparing spiritual things with spiritual.* But these men accumulating a farraginous heap of divisions, subdivisions, distinctions, limitations, axioms, positions and rules, do chanel & bottle up the water of life (as they think) in and by these, and again powre it forth as they please, and this is spiritual sorcery or inchantment, like *Saul*, when God had left him, to seek for *Baal Oboth, the Lord in a bottle, or the Lord bottled up*, and not to look for his truth as a fountain of life, or as *a wel springing up to eternal life*; and so forsook the Lord *the fountain of living waters, to draw water out of their own broken cisterns that will hold no water*; these think *Abanah* and *Pharpar rivers of Damascus, better than all the waters of Israel, and that they may wash in them and be clean*; and are not willing *to draw water with joy out of the wels of salvation*, and know not that there *is but one River the streams whereof make glad the City of God, the holy place of the tabernacle of the most high*: when he that drinketh at any other fountain, *shall thirst again, but this shall be and ever is a well-spring unto eternal life.*

1 Cor. 2. 13.

1 Sam. 28. 7.

Jo. 4. 14. Ier. 2. 13.

2 Kings 5. 12.

Isai. 12. 3. Psal. 46 4.

5. If we narrowly take a survey of the whole body of their *Scholastick Theologie*, what is it else but a confused *Chaos*, of needless, frivolous, fruitless, triviall, vain, curious, impertinent, knotty, ungodly, irreligious, thorny, and hel-hate'ht disputes, altercations, doubts, questions and endless janglings, multiplied and spawned forth even to monstrosity and nauseousness? Like a curious spiders web cunningly interwoven with many various and subtil intertextures, and yet fit for nothing but the insnaring, manacling and intricating of rash, forward, unwary and incircumspect men, who neither see nor know the danger of that Cobweb-Net untill they be taken in it, and so held fast and inchained. And while they pretend to make all things plain and perspicuous, (by the assistance of their too much magnified *Logick*) puffing men up, by making them think themselves able to argue and dispute of the high and deep mysteries of Christ,

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and to conclude as certainly and *Apodictically* as of any other Science whatsoever; they do but lead and precipitate men into the caliginous pit of meer putation, and doubtfull opination; making the word of God nothing else but as a *Magazine* of carnal weapons, from whence they may draw instruments to fight with and wound one another; or like a tennis ball to be tossed and reverberated by their petulant wits and perverse reasons, from one to another, untill truth be lost, or they utterly wearied; while in the mean time the power and simplicity of faith lies lost in the dust of disputations, and they like Masters of *Fence* seem to play many doubtfull and dangerous prizes, seemingly in good earnest, and to the hazard of their lives, when in verity it is but to inhance their own reputations, and to suck money out of the purses of the spectators; so that their fit motto and impress may be, *Disputandi prurigo, fit ecclesiarum scabies.* Now how vain this is in it self, how pernicious, injurious, deadly and destructive to the truth of the Gospel, the Apostle sufficiently admonisheth us, warning *Timothy* to *keep that which is committed to his trust, and to avoid,* τὰς βεβήλους κενοφωνίας καὶ ἀντιθέσεις ψευδωνύμου γνώσεως, *profanos illos, de rebus inanibus clamores, & oppositiones falso nominatæ notitiæ; prophane, vain bablings and oppositions of science falsly so called;* and also exhorteth to *eschew foolish and unlearned questions, which do engender strife,* and to *Titus,* that he should *avoid foolish questions, and genealogies, and contentions, and strivings about the law,* because *they are unprofitable and vain*: and therefore *Chrysostome* said well in the person of St. *Paul, Non veni syllogismorum captiones, non sophismata, non aliud quiddam hujusmodi vobis afferens præter Christum crucifixum; I came not unto you bringing the subtilties of Syllogisms, nor Sophisms, nor any other thing of like sort, except Christ Crucified.*

1 Tim. 6. 20.

2 Tim 2. 23 Tit. 3 9.

Chrysost. in ep ad Cor. 1. cap. 2.

6. The whole Scripture is given that man might be brought to the full, and absolute abnegation of all his wit, reason, will, desires, strength, wisdome, righteousness, and all humane glory and excellencies whatsoever, and that selfhood might be totally annihilated, that he *might live,*

yet not he, but that Christ might live in him, and that the life which he liveth in the flesh might be by the faith of the Son of God, who loved him, and gave himself for him. Gal. 2. 20. But if man gave his assent unto, or believed the things of Christ, either because, and as as they are taught of and by men, or because they appear probable and consentaneous to his reason, then would his faith be staturninated upon the rotten basis of humane authority, or else he might be said to assent unto and believe the things, because of their appearing probable, and because of the verisimilitude of them, but not solely and onely to believe in and upon the author and promiser of them, for his faithfulness and truths sake, and nothing else; and so *his faith should stand in the wisdome of man, but not in the power of God, and so the cross of Christ should become of none effect.* 1 Cor. 1. 17. 1 Cor. 2. 5. *But Abraham believed God, and it was counted to him for righteousness*, Gen. 15. 6. though the things promised seemed neither probable nor possible; and therefore *Sarah*, who is the type of carnal reason, laughed at the promise, conceiving it impossible in reason that she should have a child; and therefore it is not that assent nor consent that reason gives unto the things of God, as they appear semblable and like, that is the faith of *Abraham*; but a simple and naked believing and relying upon the bare and sole word of the Lord, though reason & mans wisdom can see no way how possibly it can cowe to pass, but with *Mary* and *Nicodemus* question *how can these things be*; Gen. 18. 13. for reason is a monster, and the very root and ground of all infidelity; *for the carnal mind is emnity against God, and is not subject to the law of God, neither indeed can be*: Rom. 4. 18, 19, 20. but faith is that pure and divine gift and work of God that leads the heart of man in the light and power of the Spirit of Christ, with faithfull *Abraham even against hope to believe in hope, and not to stagger at the promise of God through unbelief, but to be strong in faith, and to give glory to God. Concludimus igitur* (saith learned *Verulam*) *Theologiam sacram ex verbo, & oracylis Dei, non ex lumine naturæ, aut rationis dictamine hauriri debere*; Lib. de Aug. Scient 9. cap. 1. *Therefore we conclude that sacred Theologie ought to be drawn from the word and O-*

racles of God, not from the light of nature, or the dictate of reason.

Chap. III.

Of the Division of that which the Schools call Humane Learning, and first of Tongues or Languages.

THose Sciences that the *Schools* usually comprehend under the title of Humane, are by them divided divers and sundry waies, according to several fancies or Authors; but most usually into two sorts, *Speculative* and *Practick*: wherein their greatest crime lies in making some meerly Speculative, that are of no use or benefit to mankind unless they be reduced into practice, and then of all other most profitable, excellent and usefull; and these are natural *Philosophy* and *Mathematicks*, both of which will clearly appear to be practical, and that in a few reasons.

1. Can the Science of natural things, whose subject they hold to be *corpus naturale mobile*, be only speculative, and not practical? is there no further end nor consideration in *Physicks* but onely to search, discuss, understand, and dispute of a natural movable body, with all the affections, accidents and circumstances thereto belonging? Is he onely to be accounted ——*Felix, qui potuit rerum cognoscere causas*? Then surely we may justly conclude with *Seneca*, *Nostra quæ erat Philosophia, facta Philologia est, ex qua disputare docemus, non vivere! That which was our Philosophy is made Philologie, from whence we teach to dispute, not to live.* Surely natural *Philosophy* hath a more noble, sublime, and ultimate end, than to rest in speculation, abstractive notions, mental operations, and verball disputes: for as it should lead us to know and understand the causes, properties, operations and affections of nature; so not onely to rest there

there and proceed no further; But first therein and thereby to see and behold *the eternal power and God-head* of him, who hath set all these things as so many significant and lively characters, or *Hieroglyphicks* of his invisible power, providence, and divine wisdome, so legible, that those which will not read them, and him by them, are without excuse; and not to rest there, but to be drawn to trust in and to adore him, who is the *Causa causans, ens entium*, and God of nature; and not to become like the Heathen, when *we know God, not to glorifie him as God, neither to be thankfull; but to become vain in our imaginations, and to have our foolish hearts darkned.* And secondly, not onely to know natures power in the causes and effects, but further to make use of them for the general good and benefit of mankind, especially for the conservation and restauration of the health of man, and of those creatures that are usefull for him; for *ubi desinit Philosophus incipit medicus*, and is practicably applicable to many other things; as we shall shew when we speak of Magick. Rom. 1. 20, 21.

2. Can the *Mathematical* Sciences, the most noble, useful, and of the greatest certitude of all the rest, serve for no more profitable end, than speculatively and abstractively to be considered of? How could the life of man be happily led, nay how could men in a manner consist without it? Truly I may justly say of it as *Cicero* of *Philosophy*, it hath taught men to build houses, to live in Cities and walled Towns; it hath taught men to measure and divide the Earth; more facilely to negotiate and trade one with another: From whence was found out and ordered the art of Navigation, the art of War, Engins, Fortifications, all mechanick operations, were not all these and innumerable others the progeny of this never-sufficiently praised Science? O sublime, transcendent, beautifull and most noble Mistress! who would not court such a *Celestial Pallas*? who would not be inamoured upon thy *Seraphick* pulchritude? surely thy divine and *Harmoniacal* musick were powerfull enough to draw all after thee, if men were not more insensible than stones or trees. Is the admirable knowledge that *Arethmetick* affords worthy

of nothing but a ſupine and ſilent ſpeculation? Let the Merchant, *Aſtronomer*, Mariner, Mechanick and all ſpeak whether its greateſt glory ſtand not principally in the practick part? what ſhall I ſay of *Geometry*, *Aſtronomy*, *Opticks*, *Geography*, and all thoſe other contained under them, as they are reconed up by that myrror of manifold learning Dr. *John Dee* in his Preface before *Euclide*? it were but to hold a candle to give the Sun light, to deny that they are practical. Nay are not all the reſt alſo practical? what is *Grammar*, *Lodgick*, *Rhetorick*, *Poeſie*, *Politicks*, *Ethicks*, *Oeconomicks*, nay *Metaphyſicks*? if they ſerve to no other uſe than bare and fruitleſs ſpeculation? I will onely conclude in this caſe as they do in that maxim of *Philoſophy*, *fruſtra eſt potentia, ſi non reducitur in actum, In vain is power to ſpeculate, if it be not reduced into action and practice.*

Therefore omitting the diviſion of humane ſciences, as either the *Academies* or others have ordered them; I ſhall proceed to divide them according to that way which I conceive moſt convenient and commodious for mine intended purpoſe, and ſo ſhall put them under a threefold conſideration.

1. Thoſe Arts or Sciences, that though they ſeem to confer ſome knowledge, yet is it in order to a further end, and ſo are inſtrumental, ſubordinate, and ſubſervient to other Sciences. In the number of which I firſt reckon *Grammar*, or the knowledge of tongues, which in ſome ſort and meaſure is inſtrumental, and ſubſervient to all the reſt. Secondly, *Logick* which I account inſtrumental, and helpfull to *Mathematicks*, natural *Philoſophy*, *Politicks*, *Ethicks*, *Oeconomicks*, *Oratory*, *Poeſie*, and all the reſt as it eſpecially teacheth a *Synthetical*, and *Analytical* method. Thirdly *Mathematicks*, which are not onely ſubordinate amongſt themſelves, but eſpecially inſtrumental, and very uſefull to *Phyſicks*.

2. Thoſe Sciences that confer knowledge of themſelves, and are not inſtrumental or ſubſervient to others, as natural *Philoſophy*, *Metaphyſicks*, *Politicks*, *Ethicks*, and *Oeconomicks*.

3. Thoſe that though they conferre ſome knowledg, and have

have ſome peculiar uſes, ſo they ſeem neceſſary as ornamental, and ſuch I account *Oratory* and *Poeſie*. Which diviſions I put not ſo much becauſe they agree in this order in their proper ſubjects, and ends, as to accommodate them to my preſent diſquiſition. And I ſhall ſpeak in the order as I have put theſe, and firſt of the *Grammar*.

1. The knowledge of Tongues beareth a great noiſe in the world, and much of our precious time is ſpent in attaining ſome ſmattering and ſmall skill in them, and ſo we do all *ſervire duram ſervitutem* before we arrive at any competent perfection in them, and yet that doth ſcarcely compenſate our great pains; nor when obtained, do they anſwer our longing, and vaſt expectations For there is not much profit or emolument by them, beſides thoſe two great and neceſſary uſes, to inable to read, underſtand, and interpret or tranſlate the works and writings of other men, who have written in ſeveral languages; ſo that in this regard they are as a key to unlock the rich cabinet of divers Authors, that thereby we may gather ſome of their hidden treaſure; and alſo to inable men to converſe with people of other nations, and ſo fit men for forein negotiations, trade, and the like, which indeed are very uſeful and extremely beneficial to all mankind. Yet beſides what I have formerly ſpoken of Tongues in relation to the interpretation of the Scripture, thus much alſo is evident, that if a man had the perfect knowledge of many, nay all languages, that he could give unto man, beaſt, bird, fiſh, plant, mineral, or any other numerical creature or thing, their diſtinct and proper names in twenty ſeveral *Idioms*, or *Dialects*, yet knows he no more thereby, than he that can onely name them in his mother tongue, for the intellect receives no other nor further notion thereby, for the ſenſes receive but one numerical ſpecies or *Ideal*-ſhape from every individual thing, though by inſtitution and impoſition, twenty, or one hundred names be given unto it, according to the *Idiome* of ſeveral nations. Now for a Carpenter to ſpend ſeven years time about the ſharpning and preparing of his inſtruments, and then had no further skill how to imploy them, were ridiculous and wearisome; ſo for Scholars

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to ſpend divers years for ſome ſmall ſcantling and ſmattering in the tongues, having for the moſt part got no further knowledge, but like Parrats to babble and prattle, that whereby the intellect is no way inriched, is but toylſome, and almoſt loſt labour. Excellent and worthy was that attempt of the renowned and learned *Comenius* in his *Janua linguarum* (if it had been as well underſtood, and ſeconded by others) to lay down a platform and ſeminary of all learning and knowable things, that youth might as well in their tender years receive the impreſſion of the knowing of matter, and things, as of words, and that with as much eaſe, brevity and facility.

2. For *Grammar* which hath been invented for the more certain and facile teaching, and obraining of languages, it is very controvertible whether it perform the ſame in the ſureſt, eaſieſt and ſhorteſt way or not; ſince hundreds ſpeak their mother tongue and other languages very perfectly, uſe them readily, and underſtand them excellent well, and yet never knew nor were taught any *Grammatical* rules, nor followed the wayes of Conjugations, and Declenſions, Noun, or Verb. And it is ſufficiently known, that many men by their own induſtry, without the method or rules of *Grammar*, have gotten a competent underſtanding in divers languages: and many unletter'd perſons will by uſe and exercize without *Grammatical* rules learn to ſpeak, and underſtand ſome languages in far ſhorter time than any do learn them by method and rule, as is clearly manifeſt by thoſe that travel, and live in divers Countries, who will learn two or three by uſe and exercize, while we are hard tugging to gain one by rule and method. And again, if we conceive that languages learned by uſe and exercize, render men ready, and expert in the underſtanding and ſpeaking of them, without any aggravating or puſling the intellect and memory, when that which gotten by rule and method, when we come to uſe and ſpeak it, doth exceedingly rack and excruciate the intellect and memory; which are forced at the ſame time, not onely to find fit words agreeable to the preſent matter diſcourſed of, and to put them into a good *Rhetorical* order,

but

but must at the same instant of speaking collect all the numerous rules, of number, case, gender, declension, conjugation, & the like, as into one center, where so many rayes are united, and yet not confounded, which must needs be very perplexive & gravaminous to Memorative faculty; and therfore none that attains languages by *Grammatical* rules do ever come to speak and understand them perfectly and readily, until they come to a perfect habit in the exercitation of them, and so thereby come both to lose and leave the use of those many and intricate rules, which have cost us so much pains to attain to them, and so to justifie the saying, that we do but *discere dediscenda*, learn things, which afterwards we must learn to forget, or learn otherwise: when those that get them by use and exercitation, attain them in shorter time, have a more perfect and ready way in speaking of them, and are freed from all these tedious pains and fruitlesse labour. Much to be commended therefore was the enterprise of Doctor *Web*, who found out a more short, certain and easie way to teach the *Latine* tongue in, than the tedious, painful, intricate and hard way of *Grammar*, and that by a brief and easie *Clausulary method*, in farre shorter time to attain perfection therein, and if it had been well followed and improved, would have produced an on incredible advantage to the whole nation; but we are in this like tradesmen, who all bandy and confederate together to suppresse any new invention though never so commodious to the Commonwealth, lest thereby their own privare gain should be obstructed or taken away.

3. If the way to attain to languages by *Grammatical* method and rule were the best and most certain, (which yet we have made appear not to be so) yet the rules comonly used are guilty both of confusion and perplexity. How darkly and confusedly do they go to work? leading youth on in an intricate laborinth, wherein he is continually toyling like an horse in a mil, and yet makes no great progress, and all because the method is perplex and obscure, void of evidential perspicuity, rightly co-aptated to the tender capacities of young years, which is the cause of the other, namely its prolixity, as

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we can all witneſſe by woſull experience; and little hath been endeavoured for a remedy herein, that hath not been worſe than the diſeaſe, except the elaborate pains of our Countreyman Mr. *Brixſley*, who therein deſerves exceeding commendation.

4. I ſhall alſo touch ſome of its material defects: How probable, pleaſant and uſeful is the *Hieroglyphical*, *Emblematical*, *Symbolical* and *Crytographical* learning, and all relative unto *Grammar*, and yet therein nothing at all touched of any of them? Was not the expreſſions of things by Emblems, and *Hieroglyphicks*, not onely antient, but in and by them what great myſteries have been preſerved and holden out to the world? And who can be ignorant of the admirable, eaſie and compendious uſe of all ſorts of *Symboliſms*, that have but any inſight into *Algebraick Arithmetick*, or have but ſlenderly conſulted with the learned pieces of our never ſufficiently praiſed Countreyman Mr. *Oughtrede*, or the elaborate tracts of the laborious *Harrigon*? Or are the wonderful and ſtupendious effects that *Polygraphy*, or *Steganography* produce to be omitted or neglected? which are of ſuch high concernment in the moſt arduous occurrents of humane affairs, of what price and value theſe are, let that monopoly of all learning, the *Abbot of Spanheim* ſpeak, let *Porta*, let *Cornelius Agrippa*, let *Claramuel*, let *Guſtavus Silenus*, *Frier Bacon*, and many others ſpeak, who have written ſo learnedly and accurately therein, even to wonder and amazement. *Vid. Lib. Polygrap. Steganog. Trithem. Hen. Cor. Agrip. de occult. Philoſ. lib. Jo. Claram. in lib. Trithem. expoſitio. Guſtav. Silen. Crytomanices lib. Frat. Rog. Bacon. de mirabili poteſtate artis et naturæ lib. et alios.*

Harrigon. lib. Curſ. Mathem.

5. What a vaſt advancement had it been to the Re-publick of Learning, and hugely profitable to all mankind, if the diſcovery of the univerſal Character (hinted at by ſome judicious Authors) had been wiſely and laboriouſly purſued and brought to perfection? that thereby Nations of divers Languages might have been able to have read it and underſtood it, and ſo have more eaſily had commerce and trafick

Guſt. Silen. Crytograph. lib. 7.

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one with another, and thereby the sciences and skill of one Nation, might with more facility have been communicated to others, though not speaking or understanding that language in which they were first written. This would have been a potent means (in some measure) to have repaired the ruines of *Babell*, and have been almost a *Catholick* Cure for the confusion of tongues: for do we not plainly see that those which are deaf and dumb have most pregnant and notable waies by signes and gestures to express their minds, which those that do much converse with them can easily understand and unriddle, and answer them with the like? that doubtlesly compleat waies might be found out to convey out notions and intentions one to onother, without vocal and articular prolation, as some have all ready invented and practised by *Dactylogy*, and doubtlesly might be brought to pass by the eies and motions of the face onely. Sir *Kenelm Digby* hath an apposite, though almost incredible story of one in *Spain*, which being deaf and dumb, was notwithstanding taught to speak and understand others, which certainly was performed chiefly by the eye; and though it may seem a *Romance* to some, yet whosoever shall seriously consider the vast knowledge, cautiousness, curiosity, sincerity, and punctual account of the relator therein, will be convinced of the possibility hereof. And it is recorded, and believed with Authors of repute and credit, that in *China*, and some other Oriental Regions, they have certain characters, which are real, not nominal, expressing neither letters nor words, but things, and notions: so that many nations differing altogether in languages, yet consenting in learning these Catholike characters, do communicate in their writings, so far that every nation can read and translate a book written in these common characters, in and into their own Countrey language. Which is more manifest, if we do but consider that the numeral notes, which we call figures and cyphers, the Planetary Characters, the marks for minerals, and many other things in Chymistry, though they be alwaies the same and vary not, yet are understood by all nations in *Europe*, and when they are read, every one pronounces them in their own Countreys language and Dialect. And to make it

Sir Kenelm Digbies Book of bodies and spirits.

Fr. Bacon de Au. Sci. l. 6. c. 1.

more evident, let a character denoting man be appointed, as suppose this ✳, and though to persons of divers languages, it would receive various denominations according to their several vocal prolations, yet would they all but understand one and the self same thing by it: For though an *Hebrew* or *Jew* would call it אדם, a *Gracian* Ἀνὴρ or Ἄνθρωπος, one *that speaks the Latine Homo*, a *Frenchman Un home*, an *High German* Der Mann, a *Spaniard Un Hombre*, and *the English, Man*, yet would the intellect receive but only the single and numerical species of that which it represented, and so one note serve for one notion to all nations.

6. I cannot (howsoever fabulous, impossible, or ridiculous it may be accounted of some) passe over with silence, or neglect that signal and wonderful secret (so often mentiond by the mysterious and divinely-inspired *Teutonick*, and in some manner acknowledged and owned by the highly-illuminated fraternity of the *Rosie Crosse*) of the language of nature: but out of profound and deep consideration, must adumbrate some of those reasons, which perswasively draw my judgement to credit the possibility thereof.

Jac. Echem Book of the 3 fold life of man, and in other places of his works.

1. For when I look upon the *Protoplast Adam*, created in the image, or according to the image of the great *Archetype* his father and maker, *Creavit deus hominem ad imaginem suam, God created man in his own image*, and also find the never-erring oracle of truth declaring evidently what that image is, namly the only begotten son of the father,

Gen. 1. 27.

Heb 1. 3. ὃς ὢν ἀπαύγασμα τῆς δόξης, καὶ χαρακτὴρ τῆς ὑποστάσεως αὐτοῦ, *who being the effulgence or brightnesse of glory, and the Character and image of his subsistence:* And this image of his subsistence, being that out-flown, and serviceable word by *which he made the worlds, and that in the beginning was the word, and the word was with God, and the word was God*; from this is manifest that *Adam* made in this image of God which is his eternal word, was made in the out-spoken word, and so lived in, understood, and spoke the language of the father. For the divine essence living in its own infinit, glorious, and central being, having this eternal word, or character of his subsistence, in and with himself, and

Jo. 1. 1.

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was himself, did by the motion of its own incomprehensible love, expand and breath forth this characteristical word, in which man stood, and so spoke in, from, and through this outflown language of the father, which is the procedure of the all-working and eternal *fiat*, in which all things live stand, operate, and speak out the immense and unsearchable wisdome, power and glory of the fountain and Abysse from whence they came, *the heavens declare the glory of God, and the firmament sheweth his handy work, and every thing that hath breath prayseth the Lord*, and so every creature understands and speaks the language of nature, but sinfull man who hath now lost, defac't and forgotten it. And therefore it is not without a deep and abstruse mystery, that the *Seraphical Apostle* speaks that *he knew a man caught up into the third heaven, into Paradise, and heard ἄῤῥητα ῥήματα, ineffable words, which are not lawfull or possible to be spoken*, for this was the *Paradisical* language of the outflown word which *Adam* understood while he was unfaln in *Eden*, and lost after, and therefore the same illuminated vessel in another place mentions the *tongues of men and Angels*, which would profit nothing, if they were not spoken in, and from the eternal word, which is the love-essence, or essence of love. For this *Angelical* and *Paradisical* language speaks and breaths forth those central mysteries that lay hid in the heavenly *magick*, which was in that ineffable word that was with God, and lay wrapped up in the bosome of the eternal essence, wherein were hidden and involved in the way of a wonderful and inscrutable mystery, all the treasury of those *ideal*-signatures, which were manifest and brought to light by the *Peripherial* expansion and evolution of the serviceable word, or outflowing *fiat*, and so became existent in the matrix or womb of that generative and fætiferous word, from whence sprung up the wonderfull, numerous and various seminal natures, bearing forth the vive and true signatures of the divine and characteristical impressions: like so many *Harmoniacal* and *Symphoniacal* voices, or tones, all melodiously singing, and sounding forth in an heavenly consort, the wisdome, power, glory, and might of the transcendent central

Psa. 19. 1, 2, 3 4

Psa. 150. 6.

2 Cor. 12. 4.

1 Cor. 13. 1.

Abyſſe of unity, from whence they did ariſe, and all ſpeaking one language in expreſſing ſignificantly in that myſtical *Idiome*, the hidden vertues, natures and properties of thoſe various ſounds, which though one in the center, become infinitely numerous in the manifeſted, exiſtence and circumference, as ſaith the oracle of myſteries, *there are, it may be ſo many kinds of voices in the world, and none of them* Αφωνον *mute, or without ſignification.* Many do ſuperficially and by way of *Analogy* (as they term it) acknowledge the Macrocoſm to be the great unſealed book of God, and every creature as a Capital letter or character, and all put together make up that one word or ſentence of his immenſe wiſdome, glory and power; but alas! who ſpells them aright, or conjoyns them ſo together that they may perfectly read all that is therein contained? Alas! we all ſtudy, and read too much upon the dead paper idolls of creaturely-invented letters, but do not, nor cannot read the legible characters that are onely written and impreſſed by the finger of the Almighty; and yet we can verbally acknowledge, *praſentemque refert qualibet herba deum*, but alas! who truely reads it and experiences it to be ſo? And yet indeed they ever remain legible and indelible letters ſpeaking and ſounding forth his glory, wiſdome and power, and all the myſteries of their own ſecret and internal vertues and qualities, and are not as mute ſtatues, but as living and ſpeaking pictures, not as dead letters, but as preaching *Symbols.* And the not underſtanding and right reading of theſe ſtarry characters, therein to behold the light of *Abyſſal* glory and immortality, is the condemnation of all the ſons of loſt *Adam*; For the invſible things of him from the foundation of the world are clearly ſeen, being underſtood by the things that are made, even his eternal power and divinity, ſo that they are without excuſe. But if we look more narrowly into the great fabrick or machine, we ſhall find that it is a *Pamphoniacal* and muſical inſtrument, and every individual creature is as a ſeveral cord or ſtring indued with a diſtinct and various tone, all concurring to make up a catholick melody, and every one of theſe underſtanding the ſound and

1 Cor. 14. 10

Rom. 1. 20.

tune

cure of each other, otherwise the *Harmony* would be discordant, and man himself makes up one string of this great instrument, though in his faln condition he neither understands the sound of his fellow-strings, neither knows how he concords with this musick, neither by his own will or knowledge would concur in this heavenly consort, for to him *the pipe is not understood*, neither distinguisheth he the tunes, and so knoweth not what is piped or harped. 1 Cor 14. 7, 8.

2. Further, when I find the great and eternal being, speaking and conversing with *Adam*, I cannot but believe that the language which he uttered, was the living and the serviceable word, and that it was infinitely high, deep and glorious like himself, and that which was radically and essentially one with him, and proceeded from him, and was indeed the language of the divine nature, and not extrinsecally adventitious unto him: and when I find *Adam* understanding this heavenly *Dialect* (which had been uttered in vain if he had not understood it) I cannot but believe that this was the language of nature infused into him in his Creation, and so innate and implantate in him, and not inventive or acquisitive, but meerly dative from the father of light, *from whom every good and perfect gift doth come and descend.* Jam. i. 17.

3. Again, when I find the Almighty presenting all the Creatures before *Adam* to see what he would call them, and whatsoever *Adam* called every living creature, *that is the name thereof*, I cannot but conceive that *Adam* did understand both their internal and external signatures, and that the imposition of their names was adæquately agreeing with their natures: otherwise it could not univocally and truely be said to be their names, whereby he distinguished them; for names are but representations of notions, and if they do not exactly agree in all things, then there is a difference and disparity between them, and in that incongruity lies error and falshood: and notions also are but the images or *ideas* of things themselves reflected, in the mind, as the outward face in a looking-glasse, and therefore if they do not to an hair correspond with, and be *Identical* one to the other, as Gen 2 19, 20.

ctually and truly as the impreſſion in the wax agrees with the ſeal that inſtamped it, and as face anſwers face in a glaſs, then there is not abſolute congruency betwixt the notion and the thing, the intellect and the thing underſtood, and ſo it is no longer verity, but a ly, and falſity. And therefore if *Adam* did not truly ſee into, and underſtand their intrinſecall natures, then had his intellect falſe notions of them, and ſo he impoſed lying names upon them, and then the text would be falſe too, which avers that what he called them was their names. Alſo *Adam* was in a deep ſleep when *Eve* was framed of his bone, and yet when ſhe was brought before him being awaked, he could tell that *ſhe was bone of his bone, and fleſh of his fleſh,* and therefore *he called her woman, becauſe ſhe was taken out of man.* Now if it be denyed that he underſtood by his intrinſick and innate light, what ſhe was, and from whence ſhe was taken (which I hold altogether untrue) and that God by extrinſick information told *Adam* from whence ſhe was taken, yet did he immediately give unto her an adæquate name, ſuiting her original, which moſt ſignificantly did manifeſt what was her nature, and from whence it came, and doubtleſs the name being exactly conformable, and configurate to the *Idæa* in his mind, the very prolation, and ſound of the word, contained in it the vive expreſſion of the thing, and ſo in verity was nothing elſe but that pure language of nature, which he then ſpake, and underſtood, and afterwards ſo miſerably loſt and defaced. And if it be objected, that if *Adam* did underſtand the internal natures, vertues, effects, operations, and qualities of the creatures, then he would have known that the effect of eating of the tree of the knowledge of good and evil, would have made him wretched, and diſcovered his nakedneſs, and then he would not have been ſo mad as to have taſted thereof: To this I anſwer, firſt, that God had plainly told him, that if he did eat thereof he ſhould ſurely dy, and yet notwithſtanding he did eat thereof, rather believing the *Serpent* and *Eve*, than the words of the Almighty. But if it be ſuppoſed, that if he had known the operation, and effect of that fruit, he would not have credited

Gen. 2. 23.

dited the word of the Serpent, more than his own evidential knowledge: To this, it is cleer, that though the Serpent denyed that the effect, or eating of it, would procure death, so likewise he cunningly affirmed and insinuated, that the eating of it would open their eyes, and that thereby they should be like Gods, knowing good and evil: and therefore it was the promise of *Deifying* them, that did inflame their desires, for *it seemed to the woman good for food, and pleasant to the eyes, and a tree to be desired to make one wise, and therefore this made her put forth her hand, and eat of the fruit, and give also unto her husband, and he did eat.* But to answer this fully it is a deep mystery, and for man to eat of the tree of knowledge of good and evil, was to judge of God or his works, and creatures, by the creaturely, womanish, earthly, and Serpentine wisdome, and so to feed it self, and find both good and evil, and not to abide in the union, and to know all things in the light and image of God, and so to have seen them exceeding good, and to this the Apostle alludeth, saying, *Adam was not deceived, but the woman being deceived was in the transgression.* Gen. 3. 5. 6. 1 Tim 2. 14.

3. When I consider that the voices of birds, and beasts (though we account them inarticulate) are significative one to another, and that by the altering, and varying of those sounds, they express their passions, affections and notions, as well as men, and are thereby understood of one another, I cannot but believe that this is a part of the language of nature; for the Lamb knoweth the individual bleating of the Ewe that is the Dam, from all the rest of the Ewes; and the young Chickens will all run under the Hens wings, at a certain sound of the Cocks voice, and all the Hens will run unto him at a certain call, and therefore doubtless there is something more in that which *Cornelius Agrippa* relates of *Apollonius Tyaneus*, than every one takes notice of, that he understood the language of birds and beasts: And I cannot but admire how when we hear one laugh, and another howl and weep, though the sounds be not articulate, we can readily tell the one is the expression of sorrow, and

and grief, and the other of mirth and joy: now from whence do we know this? this is not acquired by us, or taught us by others, for even Children cry immediately after they be born, and though it be said to be by reason of the sensation of cold which they felt not in the womb, it is true, but then what is the cause that crying or weeping is in all creatures the sign of sorrow, pain or grief, might not some other kind of sound be the sign of it, or might it not in several creatures be expressed by different and various tones? No truly, the mind receiveth but one single and simple image of every thing, which is expressed in all by the same motions of the spirits, and doubtlessly in every creature hath radically, and naturally the same sympathy in voice, and sound, but men not understanding these immediate sounds of the soul, and the true *Schematism* of the internal notions impressed, and delineated in the several sounds, have instituted, and imposed others, that do not altogether concord, and agree to the innate notions, and so no care is taken for the recovery and restauration of the Catholique language in which lies hid all the rich treasury of natures admirable and excellent secrets.

CHAP. IV.

Of Logick.

IN the next place I am to consider of that which they call *ars Dialectica*, or most commonly *Logick*, the principal ends of which they make to be discovery of *Sophisms* and fallacies, producing probability and opinion, and bringing forth of certitude and *Apodictical* Science, the last of which being indeed its true and proper end; and so as to this end is subservient to some other Sciences, but especially to natural *Philosophy*. I have formerly said something of the pre-

judice

judice that it hath done to *Theology*, where I treated of that subject, and therefore shall onely now speak of it as it relates to humane and acquired Sciences, and so lay out some of its chief defects, irregularities and abuses.

1. As it is now used in the *Schools* it is meerly *bellum intestinum Logicum*, a civil war of words, a verbal contest, a combat of cunning, craftiness, violence and altercation, wherein all verbal force, by impudence, insolence, opposition, contradiction, derision, diversion, trifling, jeering, humming, hissing, brawling, quarreling, scolding, scandalizing, and the like, are equally allowed of, and accounted just, and no regard had to the truth, so that by any means, *per fas aut nefas*, they may get the Conquest, and worst their adversary, and if they can intangle or catch one another in the Spider Webs of *Sophistical* or fallacious argumentations, then their rejoicing and clamour is as great as if they had obtained some signal Victory. And indeed it is the counsel of the *Arch-Sophister* their Master, to speak ambiguously while they dispute, to obfuscate the light with darkness, lest the truth should shine forth, nay rather to spatter and blurt out any thing that comes into the budget, rather than yield to our adversary, for he saith, *Quare oportet respondentem non graviter ferre, sed ponendo quæ non utilia sunt ad positionem, significare quæcunque non videntur, Therefore it behooves the respondent not to take the business grievously, but by putting those things which are not profitable to the position, to signifie whatsoever doth not appear.* O excellent and egregious advice of so profound and much-magnified a *Philosopher*! Is this to be a lover of verity, or indeed to play the immodest Sophister and Caviller? Now how adverse, and destructive to the investigation of truth these altercations and abjurgations are, is cleerly manifest, for as *Dionysius* said against *Plato*, *sunt verba otiosorum senum, ad imperitos invenes, they are the words of idle old men unto unexperienced youth*, and nothing but vanity and trifles can arise from this way of cavillation. Aristot. lib. Topic. 2.

2. *Logick* is all applied, for the discovery and finding

forth of verity, and therein proceeds very præpostcrously: for seeing we know nothing in nature but *à posteriore*, and from the affections and properties of things must seek forth their causes, it required more powerful means, than verbal and formal *Syllogisms*, to find out, and denudate natures hidden operations. And whereas the best part of *Logick* for that purpose is *Induction*, which backt with long experience and sound observation, might be prevalent to discover the working of mother Nature; yet that hath been altogether laid aside, while the glory of *Syllogisms* hath been highly predicated: But *Syllogismus ad principia scientiarum non adhibetur, ad media axiomata frustrà adhibetur, cum sit subtilitati naturæ longè impar. Assensum itaque constringit, non res.* *Syllogism is not applyed to the principles of Sciences, it is applyed in vain to the middle axiomes, seeing it is far unequal to the subtility of nature. Therefore it binds the assent or consent, but not things.* For whereas we should from particulars proceed to generals, this prepostcrously laies down universal axiomes without due proof of them, thereby to make good particulars.

Verulam. Nov. Org. Aph. 13.

3. The main defect of *Logick* is, that it teacheth no certain rules, by which either notions may be truly abstracted and gathered from things, nor that due and fit words may be appropriated to notions, without which it fails in the very fundamentals, and falls as an house built upon sand. For, *Syllogismus ex propositionibus constat, propositiones ex verbis, verba notionum tesseræ sunt: Itaque si notiones ipsæ (id quod basis rei est) confusæ sint, & temerè à rebus abstractæ, nihil in iis, quæ superstruuntur, est firmitudinis.* *Syllogism consists of propositions, propositions of words, words are the special signs of notions: Therefore if notions themselves (which is the very bottom of the matter) be confused, or rashly abstracted from things, there is nothing of firmitude in those things that are superstructed.* So that un till a certain way and infallible rules be found out for the adæquation of notions and things, and fitting of genuine *Denominations* to notions, all the force and use of *Syllogisms*, as it should demonstrate, and bring forth science,

Verulam Nov. Org. Aph. 14.

are

are but fruitleſs and vain. *Haud leve quiddam nominis impoſitionem eſſe, nec imperitorum, & quorumvis hominum eſſe opus.* Plato ſaith, *That the impoſition of names is no ſuch light matter, nor that it is the work of the unskilfull and of any ſort of men.* Plat. in Cratyl.

4. Though *Logick* be as it were *Organon Organorum*, an inſtrumental ſcience, they ſeem in ſome ſort to make it a part of *Phyſicks*, and ſo intricate it with an innumerable commixture of the moſt difficult diſputations, as any *Philoſophy* hath: as though the unskilful and tender wits of young men were to be overwhelmed with thoſe thorny queſtions of univerſal, and *Metaphyſical* things. And as though *Logick* (if it were neceſſary and uſeful) were not to be contained in a few plain and eaſie precepts, and that it which pretends to teach a ſhort, cleer, and eaſie methode applicable to all other ſciences, ſhould be ſo intricate and perplex in it ſelf, as not to be able to reſolve of it ſelf whether it be an art, or a ſcience? *Practical* or *Speculative*? whether *ens rationis*, or ſomething elſe be the *ſubjectum* of it? So that they do not ſee that they act as fooliſhly, while they diſpute of the very art of diſputing, as he that endeavours to ſee the proper viſion of his own eye. Moreover, that which might be concluded in a plain, and ſhort propoſition, muſt be drawn into mood, and figure, and after the framing, repeating, and anſwering ſome ſcores of Syllogiſms, the matter is further off from a certain and *Apodictical* concluſion than in the beginning, and ſo moſt extremely becomes guilty of *Battology*, and *Tautologie*, which it pretends to eſchew and condemn. The grave *Seneca* ſaid well, ſpeaking of theſe nugations. *Idem de iſtis captionibus dico: quo enim nomine potius Sophiſmata appellem? nec ignoranti nocent, nec ſcientem juvant. I ſay the ſame of theſe Inſnarements: for by what name may I rather call them than Sophiſms? they neither hurt thoſe that know them not, nor help thoſe that know them.* Petr. Gaſſend. exer. Per. con. Ariſt. exer. 1. Cor. Agrip. li. de van. Scie. c. 7. & 8. de Dial. et Sophiſt. Sen. Ep. 45.

5. If we examine the *Logick of* the *Stagyrite*, who pretends himſelf the maſter of methode, and prince of perfection, we ſhall firſt find his *Organon*, which ſhould be his

great instrument, and Master-piece, to be a confused, and headless piece, wanting those lights wherewith all legitimate tractation (even *Plato*, *Cicero*, and other great men bearing testimony) is made out, and illustrated; for it wants a definition of *Logick*, it wants the proposition of the subject, it wants the distribution and partition of the matter: and what should it want more necessary than these? And though some may say that these things are added by his interpreters; that nevertheless argues his defect, and besides the additions are not so very compleat as might be desired. And secondly, in his book *de Categoriis*, definitions are usually wanting, for he defines not what a *Category* is, not what *Substance* is, nor what *Quantity* is: but if any reply, and say he could not define these because they are the *summa genera*, how could he define a *Relative*, or *Quality*, which are likewise *summa genera*? Or to what end do the *Aristotelians* define all the *Categories*? Thirdly, in his book *de Interpretatione*, what a noise doth he keep about his *modal* propositions, which he will needs limit neither to more nor fewer than four, that which is necessary, impossible, possible, contingent? But I pray you, why may there not be more? For if that be a Mood, which doth modificate the proposition, that is to say, indicates how the prædicate is in the subject, may not all Adjectives by the like right be Moods? For if this be a modal proposition, It is a necessary thing that man is a living Creature; These also are modal, It is an honest thing that man should be studious of vertue, It is a just thing that a Son should obey his Father, It is a gallant thing to die for ones Countrey; but what shall I say more of many other defects, that may be seen even of a blind man? These as instances are enough, seeing they are but pleasant deceits, and cunning trifles; *Freesilaus* the *Philosopher* us'd to say, *Dialecticos similes præstigiatoribus calcularius, qui jucunde decipiunt, That Logicians are like to cunning jugglers, who do deceive pleasantly.* So I leave many other petty absurdities, superfluities, defects, and mistakes, and pass to things more material.

Lip. in Epist. Sen. 45.

6. Lastly I shall sum up all in few words to eschew tediousness

diouſneſs. And firſt of that principal part concerning Definitions as to matter and ſubject (for we have ſaid ſomthing of it formally as to methode and tractation) which is the baſis of all, wherein if there be a defect, the whole edifice falls to the ground; for whereas it determines all perfect Definitions to conſiſt of the next *genus*, and a Conſtitutive Difference, and ſince there is ſcarcely any other difference known, except rational, and irrational, that is ſpecifical, and proxim to the individuals, the one of which is negative, and ſo can poſitively prove nothing, and the other not only is, and may juſtly be controverted, but alſo made apparent, that Brutes have reaſon gradually as well as man, how lame and dilacerate this member is, needs no further demonſtration.

2. To ſay nothing of Diviſion, how defective, and imperfect it is, but to come to Argumentation, of all the 19 ſeveral ſorts of *Syllogiſms*, ſeven onely conclude affirmatively, the other twelve negatively, and it is ſufficiently known, that *de negativis non datur ſcientia*, and therefore there is but narrow and ſtraight room left for the certainty of demonſtration: And it is undeniably true, that the knowledge of the Premiſſes is more certain than the knowledge of the Concluſion, and therefore undoubtedly certain that the knowledge of the conformity betwixt the Premiſſes and the Concluſion doth preexiſt in us, and is onely excited by *Syllogiſing*, and therefore, *quid te torques, & maceras in ea quæſtione, quam ſubtilius eſt contempſiſſe, quam ſolvere? why doſt thou torment and macerate thy ſelf in that queſtion, which is more ſubtill to deſpiſe than to diſſolve.*

Helm. l. Log. inutilis dic.

Sen. Ep. 49.

3. *Ariſtotle* forbids diſpute, unleſs with thoſe that do admit his principles, which he firſt thinketh to be true, and yet notwithſtanding from unlike principles, doth ſometimes follow a ſtrong Concluſion: as from falſe premiſſes: *Nullum adorabile eſt Creator: Omne ſimulachrum eſt adorabile. Ergo, Nullum ſimulachrum eſt Creator.* Which is a true Concluſion. From whence it cannot be judged that the Concluſion of *Syllogiſms* doth of neceſſity compel aſſent, nor that the Concluſion doth neceſſarily depend upon the Premiſſes

missis. *Itaque prout in mendacio non continetur, aut latet veritas, ejusque cognitio: ita consequens est, quod in præmissis non claudatur necessariò conclusionis cognitio.* Joh. Bap. van Hel. II. antecit. *Therefore as the truth is not contained or hid in a ly, nor the knowledge of it: So the consequent is, that the knowledge of the Conclusion is not necessarily included in the Premisses.*

4. It is cleer, that *Syllogizing*, and *Logical* invention are but a resumption of that which was known before, and that which we know not, *Logick* cannot find out: For Demonstration, and the knowledge of it, is in the Teacher, not in the Learner, and therefore it serves not so much to find out Science, as to make ostentation of it being found out; not to invent it, but being invented to demonstrate and to shew it others. A *Chymist* when he shews me the preparation of the sulphur of *Antimony*, the salt of *Tartar*, the spirit of *Vitriol*, and the uses of them, he teacheth me that knowledge which I was ignorant of before, the like of which no *Logick* ever performed: For, *Accurata Syllogismi forma, argumentoso, et luxurianti ingenio incongrua, inventioni adversissima, & res per se satis manifestas simplici verborum texturâ, præceptorum impertinentium multitudine involuit.* Nic. Hil. l. de Phil. Epicur. *The accurate form of Syllogism is incongruous to an argumentative, and luxuriant wit, most adverse to invention, and doth involve things manifest enough among themselves in the simple contexture of words, with the multitude of impertinent precepts.*

5. It is true that *Syllogistical* disputations do bring forth Conclusions, but these conclusions beget but bare opinations, and putations, no infallible Science, and so all things remain but as probable and conjectural, not as firm and certain. And yet men are puft up with this vaporous, and airy sound of words, growing insolent and confident in the vain glory of *Syllogizing Sophistry*, and so are taken off from seeking any other more solid knowledge, *Causa verò & radix ferè omnium malorum in scientiis ea una est; quod dum mentis humanæ vires falsò miramur, & extollimus, vera ejus auxilia non quæramus.* Vernlam. Nov. Org. Aph. 9. *The cause truly, and root*

root almost of all evils in Sciences, is this one, that while we falsly wonder at, and extol the force of humane understanding, we do not seek its true helps. So that as *Cardan* said of his Countreymen, I may say of our *Logicians*, One may find three gods amongst them sooner than one man, so highly confident are they through these *Dialectical* delusions. *Cum quis illa quæ nescit, scire se putat, ab hac nimirùm omnes quæcunque nos fallunt opiniones, profiscuntur. When any one thinketh he knoweth those things of which he is nescient, from this verily doth spring up all those opinions whatsoever that do deceive us.* Neither is there any thing in the Universe that is more deadly and destructive to the progress and proficiency of Science, than the opinion and conceit of self-sufficiency, and with *Socrates* the more that we are sensible of the shallowness and nothingness of our knowledge, the more it will stir us up to inquire and seek after it, and therefore precious was that advice of the divine *Plato* his Schollar: *Decet sanè eum qui magnus vir futurus est, neque seipsum, neq; sua diligere, sed justa semper, sivè à seipso, seu ab alio quovis gerantur. Ex hoc ipso delicto accidit omnibus, ut ignorantiam suam esse sapientiam opinenter. Hinc fit, ut quamvis nihil (ut ita dicam) sciamus, scire tamen omnia arbitremur. Verily it becomes him who should be great, neither to love himself, nor humane things, but to love alwaies things that are just, whether they be done of himself or any other; from this very fault, it happeneth unto all, that they opinionate their ignorance to be sapience. From hence it comes to pass, that although (as I may so say) we know nothing, yet notwithstanding we think we know all things.*

Pla l. de Soph.

Plat. Dialog. 5. de Leg.

6. And whereas *Raymund Lully* invented an *Alphabetical* way for *Syllogizing*, improved and opened by *Agrippa*, *Paulus Schalichius*, and others, in which *Picus Mirandula* and some did far excel, even to wonder and astonishment, which indeed is a far more certain, copious, easie, and compendious way for argumentation, especially to overcome all opponents, to be amply furnished to dispute *de omni scibili*, to answer all objections, and to confirm the

Cor. Agrip. li. in Art. brev. Lul. Paul. Sch. de Li. meth.

the mind in those opinions that it holds, and so deserves wondrous great praise and commendation: yet for all that it leaves the intellect nude and unsatisfyed, because it produces no certitude, nor evidential demonstration, and so fills the mind full of opinions, but not of *Apodictical* Science, and makes men *Parrat*-like to babble, argue, and say very much, but still to remain nescious, and ignorant, so vast is the difference betwixt putation and true knowledge. *Humanam scientiam in negatione quodam falsi, potiùs quàm in veri affirmatione consistere.* It is true, *That humane science doth consist in a certain negation of falsity, rather than in the affirmation of verity.* I will only conclude with that remarkable saying of the Lord *Bacon*, *Logica, qua in abusu est, ad errores (qui in notionibus vulgaribus fundantur) pabiliendos, et figendos valet, potius quam ad inquisitionem veritatis, ut magis damnosa sit, quam utilis. Logick which is abused, doth conduce to establish and fix errors (which are founded in vulgar notions) rather than to the inquisition of verity, that it is more hurtful, than profitable.*

Marsil. Ficin in Dia: 1. de Rep.

Verulam. Nov. Org. Aph. 12.

CHAP. V.

Of the Mathematical Sciences.

FOr the *Mathematical* Sciences, the superlative excellency of which transcends the most of all other Sciences, in their perspicuity, veritude and certitude, and also in their uses and manifold benefits; yet in the general they are but either sleightly and superficially handled in definitions, divisions, axiomes, and argumentations, without any solid practice, or true demonstrations, either artificial or mechanical; or else the most abstruse, beneficial, and noble parts are altogether passed by, and neglected, which we

shall

ſhall diſcover in tracing over ſome of the ſeveral parts thereof.

1. For the prime and main ſtone in the building upon which all the reſt of the Fabrick is erected, the noble Art of *Arithmetick*, ſo highly eſteemed (and that not without cauſe) in the *Schools* of *Pythagoras*, *Plato*, *Euclide*, nay and of *Ariſtotle* himſelf, is quite rejected of our *Academick* Maſters, who notwithſtanding would be eſteemed the great and moſt expert Maſter-builders, though they throw away the chief corner ſtone: And is not only ſleighted and neglected as uſeleſs, and of no value, but tranſmitted over to the hands of Merchants and Mechanicks, as though it were not a liberal Science, or not worthy the ſtudy and pains of an ingenuous & noble ſpirit: And but that ſome private ſpirits have made ſome progreſs therein, as *Napier*, *Briggs*, Mr. *Oughtredge*, and ſome others, it had lain as a fair garden unweeded or cultivated, ſo little have the Schools done to advance learning, or promote Sciences.

2. And for the noble, and moſt neceſſary Art of *Geometry*, their handling of it hath been with the ſame ſuperficial ſleightneſs, and ſupine negligence, never bringing into perfect practice, nor clear demonſtration, that which many years ago *Euclide* compiled with ſo much pains and exactneſs: and therefore are far from making any further diſcoveries therein, contenting themſelves with the ſole verbal diſputes of magnitude, quantity, and the affections thereof, leaving the practice and application thereof to Maſons, Carpenters, Surveyors, and ſuch like manual operators, as though they were too good to ſerve ſo divine and noble a miſtres. Verul. lib. de Augm. Scient. 3. cap. 6.

3. There hath been no more progreſs made in the *Optical* Art, which though it affords many, and wonderful ſecrets, both for profit and pleaſure, for by it things far off are ſeen as at hand, minute and ſmall things magnified, the wonderful interſection of various ſpecies, without confounding one another, demonſtrated, the ſight of men thereby ſuccoured, the *Syſteme* of the world thereby more perfectly viewed, and innumerable other rarities both of Art and Nature there-

by discovered; yet have the Schooles proceeded no further therein, than to verbal disputes, and some *Axiomatical* institutions and doctrines; and but for the noble attempts of some few gallant men, such as *Galalæus*, *Scheiner*, *Agnillonius*, *Hevelius*, and the like, the grand mysteries of it had lain buried in oblivion, and this age never seen those stupendious effects that through their industry in this Art hath been brought forth.

4. As for *Musick* it hath had some little better fortune, for that vulgar and practical part, which serves as a spur to sensuality and voluptuousness, and seems to be the Companion of Melancholicks, Fantasticks, Courtiers, Ladies, Taverns, and Tap-houses, that hath had some pains taken about it, and some honour done unto it, that the professors thereof might become *Graduats*: yet for the mysterious part thereof, which consists in the discovering the nature, quality, distinction, sympathy, dyspathy, significancy, and effects of all sounds, voices, and tones that are in nature, these are altogether unknown and neglected; as also how far it might be serviceable to Natural *Philosophy*, and the laying open of the universal *Harmony* of the whole *Mundane* Fabrick, that remains untried and unattempted.

5. The *Astronomy* that the Schools teach being according to the *Peripatetick*, and *Ptolemaick Systeme*, which they maintain with much rigor, severity, and earnestness, is by them extolled to the heavens, as an *Harmoniacal*, regular, and stately *Fabrick*, which without any demonstration, or punctual observation they obtrude upon the tender understandings of unwary youth: holding it forth with that Magisterial confidence, as though it would cleerly salve all the *Phænomena*, and render the true causes, grounds, and reasons of the motions, and effects of all the *Celestial* Bodies, and as though no fault, exorbitancy, or defect could be found in this so compleat, beautiful, and orderly structure. Yet I must confess, that in all the *Scholastick* learning there is not found any piece (to my apprehension) so rotten, ruinous, absurd and deformed as this appears to be, and which

may

may from most evident principles be everted, and cast down, and therefore I shall take the more time in enervating the same, and that from undeniable principles both of *Physicks* and *Mathematicks*.

1. They take that for granted, or at least unproved, which is not onely controvertible and indemonstrable, but untrue, namely that the Earth is the Center of the Universe, and that the Heavenly Bodies do in their motions so observe it, and from thence deduce the causes of gravity and levity; the contrary or uncertainty of which appears thus. First, it is manifest that the Earth is not the Center of the most of the Planetary Orbs, because by their own confession, some of them, as ☉ and ♂, are sometimes in their *Apogæum*, and sometimes in their *Perigæum*, that is sometimes neerer and sometimes further off from the earth; which they could not be if the Earth were their true and proper Center, because according to the definition of *Euclide*, the Circumference of a circle is every where equidistant from the Center, and all lines drawn from the Center to the Circumference are equal, otherwise it would cease to be a Circle, and one Circle can have no more than one Center, and therefore the Earth is not the Center of the Planetary Orbs. Secondly, if the Earth were the Center of the Orbs of the Planets, the dissection of the Orbs would be needless into Excentricks and Concentricks, which being their own tenent, manifests that the earth is not their true, and proper Center.

Thirdly, if the Earth were their Center, the Æquinoctial line dividing both the Earth and Heavens into 2 equal parts, the *Sun* in his annual motion could not be longer time in the one half circle than in the other, unless he did not pass over equal intervals, or spaces of the line, in equal times, and so should intend and remit his motion, which is denyed of all: and therefore it being found by certain, and yearly observation, that he staies some daies longer on the Northside the *Æquator*, than on the South, it is manifest that the Earth is not the Center of his Orb.

Fourthly, there are divers Planetary Bodies that move circularly, that observe not the Earth as their Center at all, as

those *Medicaal*, and *Jovial Planets* about *Jupiter*, and those about *Saturn*, *Mercury*, and *Venus* about the *Sun*, and the *Sun* about his own Center, and none of these respect the Earth, and therefore cannot be their Center, and so not the Center of the Universe.

Fiftly, for the eighth *Sphere*, no certain rules of Art can demonstrate that the Earth is its center, because it bears no sensible magnitude unto it, so that no angle can be assigned to know the distance, and the eye cannot be a certain, and proper judge, because it judges not of distance as its proper and immediate object, but to do that is the office of the common sense, and where the distance is great and vast, though the eye be far distant from the Center, yet the things seen will seem to stand in a Circle about it, though they be not truly and exactly so, and therefore this is rather a postulate than a proof, and may justly be denyed, because it cannot be proved: and that all the Stars that we call or account fixt (though we cannot prove that any of them are so) stand all in one Circle or Orb, cannot be true, for doubtless the difference of their apparent magnitude is a certain argument that they are not all equidistant from the Earth, and therefore is not the Earth the Center of the Universe.

Sixtly, for their arguments taken from gravity and levity, they do but therein usually *petere principium*, *beg the question*, and thereby commit a most palpable *Paralogism*, for they define gravity to be that *quod tendit deorsum*, *which tends downwards*, and if the cause is demanded why bodyes severed from the Earth do tend downwards thither again, they answer *quia gravia sunt*, which in effect is this, They tend to the Earth, because they do tend to the Earth, which is *idem per idem*: And if it were granted that the Earth were the Center of the Universe, how could a Center any way understood be the cause of any motion at all, or locality which is defined to be a space void of bodies, and capable of them, have any power to give or cause motion in a body? These are the groundless *Chymæra's* of the *Schools*, not knowing that bodies separate from the Earth do move thither again from an intrinsick *magnetick* quality, which in the

Gal. Galil. lib. de Syst. mund.

Gil. l. de mag. et lib. de Phil. nov.

the Earth is by way of attraction, and in the part ſeparate by motion of Coition, beſides ſome other clear reaſons that may be given from *Statical* principles, which for brevities ſake I am forced to omit: For from this is cleerly evident, that the Earth not being the Center of the Univerſe, the whole order and frame of the *Scholaſtick Syſteme* is diſſipated, and out of courſe.

2. And as they have miſtaken the mark in making the Earth the Center of the Univerſe, they are as far wide in their determinations of the Circumference or Orbs, which they make to be of a *Quinteſſential* nature (as they term it) and ſo to be incorruptible, and free from change, and mutation: and it is believed that this opinion is chiefly grounded upon this, That the heavenly bodies remain ſtill in the ſame ſtate wherein they have been obſerved to be many ages before, and no ſenſible alteration could ever be perceived in them.

To which I anſwer, That this concludes nothing, becauſe it argues from knowing to being, when being hath no dependance of, nor connexion with our knowing, for our knowledge is not the cauſe, nor meaſure of the Univerſe, nor of the things therein contained. *Falſo enim aſſeritur, Senſum humanum eſſe menſuram rerum; Quin contra, omnes perceptiones, tam ſenſus, quam mentis, ſunt ex Analogia hominis, non ex Analogia Univerſi. It is falſely aſſerted that mans ſenſe is the meaſure of the Univerſe; but on the contrary, all perceptions, as well of the ſenſe as of the intellect, are from the Analogy of man, and not from the Analogy of the Univerſe.* Vernlam. Nov. Org. Aph. 14.

Again, there may be many alterations in the *Caleſtial* bodies, which by reaſon of their vaſt diſtance, we do not, nor can perceive, eſpecially if we conſider, that mutation is underſtood either as it relates *ad totum*, or *ad partes*, therefore there may be (and without doubt are) many alterations in the parts of the Heavenly bodies, though no change at all as to the whole of any of them: for the Earth is as immutable, and incorruptible, in relation to the whole, as any other of the *Starry* or *Planetary* bodies are, for the change White Dial. de mundo.

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that appeareth in it, is but in the external and superficial parts, and though sensible to us, yet is not perceiveable at a great distance, for we can discern diverse mountains, and parts of the Earth, far remote from us, yet cannot discern the alterations that are in the parts thereof: and so if ones eye were placed in the *Moon*, *Mars*, *Jupiter*, or any of those Stars which we call fixt, we should perceive as little change then here on the earth, as we being placed here see in those Starry bodies.

Neither is it true that there appears no mutation in the Heavenly Bodies or Orbs, because many men of great note, experience and skill, have observed that *Comets* have been above the Sublunary Orb, and evidently demonstrated the same by there *Paralax*, as *Tycho Brahe*, *Copernicus*, *Kepler*, *Galalæus*, and others, which clearly demonstrates (beyond the refutation of *Logick*) that there are changes and mutations in the heavens, and so they are not incorruptible bodies as is falsely asserted: And the evidence that appears to the eye in the use of the *Telescope* doth plainly evince that there is an *Atmosphere* about the body of the *Moon*, which could not be if the Heavens were unchangeable.

3. Another thing that they grosly maintain is, that the heavens or Orbs are as hard as Steel, and as transparent as glass, and yet have so many several sorts of solid Orbs, *Eccentricks*, and *Concentricks*, *Epicycles*, and the like, which are all concamerated one within another, the absurdities and impossibilities of which I shall demonstrate in some cleer arguments.

For first, if they were solid bodies, and that every Star were but *densior pars sui Orbis*, then either the convex superficies of the contained Orb, must exactly touch the concave superficies of the circumambient Orb, or else not, but some space to intercede between, which must either be implete with some other body, or else be a meer inanity and vacuity; neither of which can possibly be according to their own tenents, nor indeed according to the truth it self. For if the convex superficies touch the concave exactly in all parts and there be neither vacuity, nor body interjacent, then as the

the *Mathematicians* truly say, they must touch in infinite points, and so there could be no motion at all, because there could be no appulsion, nor retrocession, and where there is neither of those, it is impossible there should be local motion, or lation; for two exact smooth, and equal superficiesses of hard and solid bodies joined together, the uppermost will if it be taken up, lift up the lower also, if the force of elevation be in the center of the solid bodies so fitted, as may be seen in Brass, Marble, and the like, so that consequently there could be no motion at all. And if there were any motion at all it must needs be with confrication, and attrition, and so without plenty of some oily substance, would not cause *Pythagoras* his spherical musick, but an unheard-of rumbling noise, such surely as possessed the brains of those that were the first Authors of this mad and extravagant opinion. And if they say there is a vacuity interjacent, then there could be no motion neither, because according to the Schools *Motus in vacuo non datur*; and if they say there is some other body between, then what is it? for if it be any Elemental body, that cannot be, because they have incarcerated them all within the concave superficies of the *Moon*; and if there were some other body included between, then seeing according to *Aristotle* that *Motus est causa caloris*, how could it be but that body would be heated even to ignition? seeing that all heat doth continually rarifie, and the Orbs continually moving with such an incredible swiftness, and no place for evaporation, but it close pent in by the Superior Orb, how could all not be of a flame, or forcibly torn, and rent asunder? unless we must have all solved with that frivolous shift, that they are eternal, and ingenerable bodies, and are but *Analogously* like ours, and so suffer none of these things that Elemental bodies do: when they have cleerly shewed what that *Analogy* is, and wherein they are neither absolutely like our Sublunary bodies, nor absolutely different from them, then it will be time enough to return them a more plenary responsion, until then let this suffice.

Secondly, if the Orbs were solid, how could it possibly be

Kepler. Astro. Epit.

Philolai de Syst. mund. liber.

be that there could be *Eccentricks*, and *Concentricks*, the one having a more dense or thick part in one side of the Circle or Orb, and the other having so likewise on the parts opposite? now how these should have motions of their own, if they be solid, to me seems impossible; or how or which way *Epicycles* should be affixed to these extending onely from the concave Superficies, to the convex, how this should be in *Spherical* solids, or Orbs, without either penetration of dimensions, admitting of vacuity, or some other fluid body to be interjacent, to me seems more difficult to unloose, than the *Gordian* knot was to *Alexander*, and will never be untyed unless *Aristotle* have learned of his great Patron to cut that asunder which he cannot unty?

White Dial. de mund. fol. 84.

Kepler. de Stella martis lib.

Thirdly, if the Orbs were solid, and impenetrable, then could not possibly any Comets be above the superficies of the *Moons* Orb, or if it be certain that they have been observed above (which is true) then of necessity the Orbs are not solid, but fluid bodies: neither could any new Star ever appear if they were solid, but such have been known undoubtedly to be seen sometimes, and yet were no Comets, therefore of necessity they are fluid, and not solid bodies. And it is undeniably true, that if the Orbs were hard as Steel, and of such solidity as is alleged, then they could not possibly intersect or enter into the Orbs of one another; but it is certainly known by exact observation, and *Mathematical* demonstration, that when *Mars* is in the lowest part of his *Epicycle*, or in *Perigæo*, he is then within the Orb of the *Sun*, which he could not penetrate if it were solid, and therefore unquestionably they are not hard, but fluid bodies; and so the *Scholastick Systeme* is ruinous, and groundless.

Fourthly, I shall urge one *Optical* argument, which is this, That if the Heavens were all solid, and divided into so many Orbs, and they again subdivided into others, then it must follow necessarily that according to the multitude of Superficiesses, so must the multiplicity of refractions be, which in this case would be very numerous, and so none of the

the Stars or Planets would ever be seen in their true places, but either confounded, or numerously multiplyed, which how absurd, let the abbetters of this opinion themselves judge.

4. From these they ground the motion of the tenth, ninth, and eighth *Sphere*, making the tenth *Sphere* move most rapidly from East to West in that space which we call 24. hours, and so snatcheth, and forceably whirleth about with it, all the inferior Orbs, which innately, and properly have a reluctancy, and contranitency against it. The absurdity of which appears thus.

First, that the Diurnal motions of all the Orbs in 24. houres, except the tenth *Sphere*, are meerly violent, and compulsive, and only the motion of it natural, and proper. Now how could they conceive, who hold that *nullum violentum est perpetuum*, that a motion that is violent could be perpetual in nature, especially to these pure bodies which they hold to be eternal and immutable? or how can it be that the first *Sphere* should communicate its velocity to all the inferiours, and the second should communicate none at all? Why is not *Jupiter* carried with the motion of *Saturn*? or the *Sun* with *Mars*? *Hoc mihi si solvas Oedipus alter eris.*

Secondly, if the extreme and incredible velocity of the tenth *Sphere*, be seriously considered, it will exceed all possibility of belief, nay even swifter than thought or imagination: for of diverse Orbs moved about in the same space of time, the least moves the most slowly, and the greatest most swiftly, for if it be computed according to the least *Diameter* given unto it, and how it moves more swiftly than the Orb of the *Moon*, by so many times as it exceeds the greatness of its Circumference, it will be past all humane sense, and understanding to imagine the extreme velocity of it, so that no Creature can believe it to be so, but also be compelled to confess, that it is most likely either to be set on fire, or else by the most vehement swiftness to be whirled into *Attomes*.

Thirdly, if the eight *Sphere* be conceived to move, wher-

in as they fancy to themselves that all the Stars are fixt, like so many nayls in a wheel, or bowl, considering the immensity of its compass, the exceeding velocity of its motion, and that the earth (which they suppose the Center of it) to bear proportion unto it, but as an insensible point or prick, then it could not possibly be but that it would appear all as an inflamed light, or a concave globe of fire, because at one and the self same instant the multitude of raies would all be united in this small Center, the Earth (or eye of the beholder) and infinite rayes strike the eye successively in a manner, ere the others passed from it, and so must of necessity appear all intirely as fiery and luminous; so as we behold a piece of wood whose end is fired, being quickly whirled about in the air in a circular manner, doth appear to the eye as a true Circle of fire or brightness: so that this would of necessity follow upon the structure of their *Systeme*. By all which arguments may evidently appear, the impossibility of the truth of that *Astronomical* composure which the *Schools* cry up for so certain, neat, and beautiful, so that I may conclude with a learned Author, *Non enim quæ de Arthuro et ipsius Equitibus finguntur, vel Homericas fabulas persuasu magis difficiles opinor, quam illam Cælorum Compositionem, quam proxima nos sæcula erudierunt. For I think the things that are feigned of Arthur, and his Knights of the round table, or the fables of Homer, are not more difficult to be perswaded, than that composure of the heavens, which the age preceding us hath taught.*

White Dial. de mundo fol. 45.

5. For the other parts of *Mathematicks*, some of them are utterly unknown and unpractised in the Schools, and some of them are taught there, but so sleightly, and superficially, that small or no profit doth redound from thence. For they usually teach *Cosmography*, and the several species thereof, as *Geography*, *Hydrography*, *Chorography*, and *Topography*, yet whereas *Cosmography* is the whole, and perfect description of the Heavenly and also Elemental part of the world, and their *Homologal* application, and mutual collation together, and so is no small or simple art, but high and of manifold use, there hath little or nothing been done to

Nath. Carpen. Geograph.

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the perfection thereof, especially in the mutual correspondence and application of the heavens, and earth: neither are the other brought into practice, especially the *Theorems* of *Hydrography*, whereby men might be made able and fit for Navigation, one of the most necessary imployments and advantages of our Nation. Jo. Dee in his Preface before Euclide.

6. What shall I say of the Science, or art of *Astrology*, shall the blind fury of *Misotechnists*, and malicious spirits, deter me from giving it the commendations tha: it deserves? shall the *Academies* who have not only sleighted and neglected it, but also scoffed at it, terrifie me from expressing my thoughts of so noble and beneficial a Science? shall the arguments of *Picus Mirandula*, and others, who have bitterly inveighed against it, fright me from owning the truth? shall the thundering Pulpit men, who would have all mens faith pinned upon their sleeves, and usually condemn all things they understand not, make me be silent in so just a cause? No truly, I must needs defend that which my judgement evidences to me to be laudable, and profitable; not but that I utterly condemn the ignorance, knavery, and impostorage of many pretending *Scioliists*, that abuse the same; but shall the art of medicine or *Chymistry* be condemned, and rejected, because many ignorant *Empericks*, and false *Alcumists* do profess them? Surely no, let the blame be upon the professors, not upon the profession it self. For the art it self is high, noble, excellent, and useful to all mankind, and is a study not unbeseeming the best wits, and greatest Scholars, and no way offensive to God or true Religion. And therefore I cannot without detracting from worth and vertue, pass without a due *Elogy* in the commendation of my learned, and industrious Countrymen Mr. *Ashmole*, Mr. *William Lilly*, Mr. *Booker*, Mr. *Sanders*, Mr. *Culpepper*, and others, who have taken unwearied pains for the resuscitation, and promotion of this noble Science, and with much patience against many unworthy scandals have laboured to propagate it to posterity, and if it were not beyond the present scope I have in hand I should have given sufficient reasons in the vindication of *Astrology*.

7. What shall I say of *Statick*, *Architecture*, *Pneumatithmie*, *Stratarithmetrie*, and the rest enumerated by that expert and learned man, Dr. *John Dee* in his Preface before *Euclide*? What excellent, admirable and profitable experiments do every one of these afford? truly innumerable, the least of which is of more use, benefit and profit to the life of man, than almost all that learning that the Universities boast of and glory in, and yet by them utterly neglected, and never lookt into: but what huge, stupendious effects these can bring to pass, let our learned Countreyman *Roger Bacon*, let *Cardinal Cusan*, let *Galalaus*, let *Ubaldus*, let *Marcus Marci*, let *Baptista Benedictus*, and many others speak, who remain as a Cloud of Witnesses against the supine negligence of the Schools, who for so many Centuryes have done nothing therein: Is this to be the fountains of Learning, and wellspring of Sciences? let all rational men judge and determine.

Chap. VI.

Of Scholastick Philosophy.

For the *Philosophy* which the *Schools* use and teach, being meerly *Aristotelical*, let us examine the ground and reasons why it should be imbraced and cryed up more than all other, or why he should be accounted the Prince of *Philosophers*, the Master-piece of Nature, the Secretary of the Universe, and such an one beyond whose knowledge there is no progression. Which however applauded to the heavens by his Scholars, who are *jurati in verba Magistri*, will upon exact and due test prove, both weak, groundless, false, unsatisfactory, and sterile, which we shall labour to elucidate in some clear Arguments.

1.

1. It will evidently appear that there is no reason why the *Aristotelical* Philosophy as it stands now received, according to the comments, glosses, expositions & interpretations of the Schools, should be preferred before any, or all others. Because *Aristotle* was but a man, and so might err as soon as others, neither was he more than other men any way priviledged from human imperfections; nay considering him as an heathen, who did not know nor acknowledge the fountain of life, which is God, and therefore by so much less was able to teach the truth, by how much he was distant from the knowledge of the true God, who is the primary verity: so that what he hath written was rather by a *Diabolical* than a *Divine* instinct, for *Philoponus* recordeth that he begun to *Philosophize* by the command of the Oracle of *Apollo*, which the most acknowledge to have been uttered from the Devils advice and affliation.

2. Neither were his principles and tenents any whit differing from such *Diabolical* directions, for he makes God an animal in his *Metaphysicks*, and chained him to the exteriour superficies of the highest heaven, and made him bound to the laws and necessity of Fate, which his most obsequious and sworn Interpreters cannot deny. He denies in the twelfth of his *Metaphysicks* that God takes care of minute, and small things; in his books *de Cœlo* he makes the world eternal and increate; in his *Physicks* he teacheth that nothing can be made *ex nihilo*; in his books *de anima*, and of *Ethicks*, he denies the possibility of the resurrection of the dead, and in many places doth deny the immortality of the soul, so that *Lactantius* said truely of him, *Aristoteles Deum nec coluit, nec curavit*, and yet this is the man that is onely thought worthy to be the father of *Christian Philosophy*. Arist. li. Phys. 8 prior. de Cœl. et de mund.

3. If the qualities and conditions of the man be lookt into, there will be found no such integrity in him, as may be any just cause of much confidence, nor such manners as may exroll him above the rest, for doth not *Eusebius* and others relate that he betrayed his Countrey to the *Macedonians*, and to blot out the infamy thereof that he prevailed with *Alexander*

lexander to restore it again? And doth not *Pliny* relate, speaking of the poison, *Cum id dandum Alexandro magno Antipater misterit, magnâ est Aristotelis infamiâ excogitatum, that he was guilty of administring the same?* was he not accused for being guilty of immolation to his meretricious mistris? was he not guilty of ingratitude (the worst of vices) against his divine Master *Plato*, who therefore did justly and litly call him his Mule, because he kickt against the dugs from whence he suckt his knowledge? what shall I recount his avarice, which makes *Lucian* so nippingly feign *Alexander* in hell upbraiding him, that he had constituted riches a part of the chief good, that by that specious pretext he might obtain of him greater store of riches? Shall I recount his intemperance, voluptuousness, and obscæne manner of living? or his impious, doubtful or wicked end? no, let them be buried with his ashes. But these things do sufficiently declare, that there is no just cause so much to esteem and applaud him above others, seeing it is impossible to congest so many things against *Plato*, *Zeno*, or *Epicurus*.

4. But I know they will say, They respect not his life so much, as his most excellent wit, great judgement, and laudable diligence; well, I easily grant that he was such an one, but to prefer him notwithstanding before all others, cannot be done without too much temerity. And when arguments are comparative, between the abilities of one person and another, it behooves him that will judge, and determine rightly, thorowly to understand and preponderate what there is of value and price in either of them. So when there is a question made of *Pythagoras*, *Thales*, *Democritus*, *Zeno*, *Plato*, *Phyrrho*, *Epicurus*, and others, it is fitting he should understand whatsoever they all knew, or else he cannot discern wherein *Aristotle* doth exceed them all: unless he will give his sentence before the one party be heard speak. For how can any boast to be more wise than all the other *Philosophers*, without being guilty of intollerable pride and arrogance? and truly I believe that *Socrates* who confessed that he knew nothing, understood far more than the

Stagyrite,

Stagyrite, who would hardly acknowledge himself ignorant of any thing.

5. But perhaps it will be said that he hath been received, and approved of by *Themistius*, *Abenrois*, *Thomas Aquinas*, *Scotus* and other men of great and vast learning, and knowledge; well, it is truth he hath been so; but who hath ever been the builder, or rayser of any Sect that hath not had multitudes to cry him up, to follow him, and earnestly to defend him? have not the *Academicks* as much applauded *Plato*, as the *Peripateticks* have done *Aristotle*?

And have not the *Sceptists* as much extolled *Pyrrho*? and the *Epicureans*, their Master *Epicurus*? of whom it is said,

Qui genus humanum ingenio superavit, et omnes
Praestrinxit, stellas exortus ut aethereus sol.

Nay is it not common to all, extremely and *Hyperbollically* to applaud the authors, and builders of their Sect? neither hath he been, or is so generally received, and commended, but many men of as great note as any that have stood for him, have disceded from him, or opposed him; for in his own times the whole *Schools* of the *Academicks* and *Stoicks* did oppugn him, *Epicurus* in many things did contradict him, and *Pyrrho* in all, nay his famous disciple *Theophrastus* (as *Themistius* relateth) did tax his master in many things: neither in all succeeding ages hath there wanted able and learned men who have strenuously opposed him, in many things if not in all, as *Thomas* himself, *Albertus Magnus*, *Scotus*, *Gregorius*, *Durandus*, *Harveus*, *Maronaus*, *Alliacensis*, *Nicolaus Cusanus*, and many others; neither ought we therefore to follow or extoll him because multitudes have esteemed and adhered to him, for as *Cicero* well said, *Philosophia multitudinem consultò devitat, panciscq; est contenta judicibus. Philosophy consultively escheweth the multitude, and is content with a few judges.* And as *Seneca* witnesseth, *Hac pars major esse videtur; ideò enim pejor est. Non tam bene cum re-*

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bus humanis agitur, ut meliora pluribus placeant. Argumenti peſſimi turba eſt. This part ſeemeth the greater, therefore it is the worſe. It goes not ſo well with humane affairs, that the better things ſhould pleaſe the moſt. The multitude is an argument of the worſt. Neither if his *Philoſophie* had been ſound and perfect, need his Sectators appeal to authority, and compliance of others, becauſe truth is able to ſtand of it ſelf, without the authority of others: what is the cauſe that ſince the time that *Euclide* writ his Elements of *Geometry*, there is not any one found that hath rejected them? or who hath not followed them? Truly becauſe the indubitable verity is in them, and it is impoſſible the intellect ſhould not aſſent unto them when they are known. And would not the ſame thing have happened to the tenents of *Ariſtotle* if they had been true, and indubious?

6. But they will urge further and ſay, that he is praiſed, and extolled of other famous men that were not of his Sect, as *Cicero*, *Plinius*, and *Quintilian*, and that he hath the teſtimony of *Philip* and *Alexander* that were great, and knowing men. It is true, and no way to be denyed, for *Cicero* ſaith of him, *Quis doctior? quis acutior? quis in rebus vel inveniendis vel judicandis acrior Ariſtotele unquàm fuit? who hath been more learned? who hath been more acute at any time than Ariſtotle either in the invention, or judging of things?* And *Pliny* one while calls him *Summum in omni doctrinâ virum! the chief man in all learning!* ſometimes he calls him *Virum immenſæ ſubtilitatis, a man of immenſe ſubtilty.* And *Quintilian* ſaith, *Quid Ariſtotelem? quem dubito ſcientiâ rerum, an ſcriptorum Copiâ, an eloquendi ſuavitate, an inventionum acumine, an varietate operum clariorem putem. What ſhall I ſay of Ariſtotle? whom I doubt whether I might think more famous by his knowledge of things, or by his copiouſneſs of writings, or by his ſuavity of eloquence, or by the acuteneſs of his inventions, or by the variety of his works.* Well, admit all this to be true (as who would deprive him of his due honour) yet theſe are but the judgements of men that might err

as

as well as he; and what if others have thought otherwise? must we altogether stand to these mens judgements? or hath nature appointed them to be final and infallible determiners, from whose judgement there is no appeal? might not *Aristotle* and these men err in something? or were they privileged from the common frailty of all men? no, I believe not but that the proverb is true in them, and all men besides, *humanum est errare*. But shall we not find that the self-same men have given as great, or greater commendation to others? yes truely, for being Orators they had all the liberty of a profuse and *Hyperbolical* stile, and often bringing in a commendatory catalogue of learned and worthy men, there was no cause why they should omit the noble *Stagyrite*.

But have they not often celebrated and preferred others before him? yes verily there is hardly any thing more vulgarly known, than that iterated saying of *Cicero*, when he was commending any of the *Philosophers*, alwaies added *semper excipio Platonem*, which manifested the high esteem that he had of him, accounting no other worthy to be compared with him, whom he judged superlative to all: and for *Pliny* we shall find him giving the precedence of wit and knowledge to *Homer* above all others, and calling *Plato Sapientiæ Antistitem*, than which *Elogy* I know not what can be given more illustrious, and also openly professing his repugnancy to *Aristotle*, and that he had added many things which that great man was ignorant of. And for *Quintilian* you may hear him preferring *Plato*, *Philosophorum quis dubitet Platonem esse præcipuum, sive acumine disserendi, sive loquendi facultate divina quadam, et Homerica? ut mihi non hominis ingenio, sed quodam Delphico videatur oraculo instructus. Who doubteth that Plato is the chief of Philosophers, whether in the acuteness of disputing, or in a certain divine and Homerical faculty of speaking? That he seems to me instructed not with the wit of man, but with a certain Delphical Oracle*: And in a word, if thou wilt credit *Quintilian* thou shalt find him extolling *Cicero* beyond *Aristotle*, *Plato*, or any other of the foregoing ages; so that the same mouths that com-

mend him, do also prefer others before him.

But if the authority of men, the credit of the best esteemed, and the number of voices could certainly decide the truth, then what store of witnesses might be brought against him, and those also men of the greatest esteem and repute of any in the Christian world? For is not the whole *Peripatetick Philosophy* rejected of all the antient Fathers? what need is there to memorate *Tertullian*, *Irenæus*, and the more Antient? what need is there to mention *Lactantius* who so often carpeth at *Aristotle*, *tanqnam secum dissidentem, et repugnantia dicentem, et sentientem*, as *one disagreeing with himself, and speaking, and thinking repugnant things*? Why should I name *Justin Martyr*, who so often reprehendeth him? or *Hierome*, who with so open, and tart a word taxeth *versutias ejus, his subtilties*? why should I recite *Ambrose*, *Augustine*, *Theodoret*, and the rest? who impugning humane *Philosophy* in general, have not intended to spare *Aristotle* alone. But in the name of them all hear *Gregory Nazianzen* who saith so elegantly, and truly, *Abjice Aristotelis minutiloquam sagacitatem, abjicite mortiferos illos super anima sermones, et universe humana illa dogmata. Throw away the minutiloquious sagacity of Aristotle; throw away those mortiferous Sermons of his upon the soul: and universally all those human opinions of his.* So that if the judgement of the Fathers be of any weight, the *Philosophy* of *Aristotle* is not much to be regarded.

As for that which is alleged concerning *Philip* chusing *Aristotle* for a Tutor to his Son *Alexander*, it merits but a slight confutation: for admit that *Philip* was a very wise and prudent Prince (as no doubt but he was) yet did the excellency of his skill principally consist in *Political*, and Military prudence, and knowing Arms better than Arts, was not adæquately fit to judge of the abilities of *Aristotle*, except by vulgar rumour, and common fame. And it is not to be denyed that in his time the fame of *Aristotle* was exceedingly blown abroad; but who is ignorant of the inconstancy and levity of the popular croud in propagating,

and

and ſpreading of rumours? But let it be granted that *Ariſtotle* did excell not only all the learned men in *Greece* that lived in his time, but all the men of the whole world that lived in the time of *Philip*; yet what is this to the number and abilities of thoſe that have lived both before and ſince? or how comes the Judgement of *Philip* to oblige us who are not under his Empire, and who could not compel the minds of men, under the tyranny of one mind? for it is eaſier to inſlave bodies than to captivate minds. And for *Alexander*, though he had *Ariſtotle* in ſingular eſteem, yet did he much value other learned men, as *Xenocrates*, whoſe æmulator *Ariſtotle* was, and alſo *Pyrrho*; ſo that both theſe received for gifts many Talents.

But this is not to be denyed, that the ſplendor of *Alexanders* name did bring much credit, and authority to *Ariſtotle*, both living and dead: but this notwithſtanding amongſt the vulgar and thoſe of vulgar wits, who as they are onely moved with external ſhowes, ſo they think that a great Prince cannot but have a great Maſter: when for the moſt part Princes chuſe not Tutors for Princes, either for their abilities in judging of the ſolidity of literature, or for the love they have to vertue, truth, or ſincery, but rather for worldly or *Politick* ends; that their ſons may be inſtructed, and fitted both to keep and acquire large Dominions, and Territories; and for the moſt part true Science ſcorns the bondage, flattery, and vanity of Courtly ſplendor.

2. Again, there is no reaſon why the *Peripatetick Philoſophy* ſhould have the palm and preheminence above all other, becauſe there is a great uncertainty both of the books and doctrine of *Ariſtotle*, as we ſhall evince in ſome few reaſons.

1. It is uncertain whether any book of *Ariſtotle*, or which owns him for author, be extant or no; for if it were not dubious to what end do his interpreters, as *Simplicius*, *Themiſtius*, and almoſt all the reſt, which write in this age, prepoſe this queſtion at the beginning of every book that they expound, *Sitne hujuſmodi liber Ariſtotelis an non? is this book Ariſtotles or not?* Certainly if this thing

were not dubious, there were no cause for propounding this question; for we use not to scruple about things that are certain, but about things that are doubtful. For it is inquired concerning his book *de interpretatione*, whether it be his or no, the later men do affirm it, but long ago *Andronicus Rhodius* hath denyed it, whether therefore shall we give our suffrage to these modern men, or to him that is more antient? who by the verdict of *Boetius*, and *Porphyrius*, is said to have brought *Aristotles* writings out of *Greece*, and to have digested them into order; who shall loose this knot? who shall resolve this doubt?

2. Another argument ariseth from hence; that *Laertius* hath drawn the order and Catalogue of *Aristotles* books, and yet many are wanting which he enumerates, and we have many as 12. or 14. of *Metaphysicks*, 8. of *Physicks*, 4. *de Cœlo*, 2. *de generatione*, 4. *of Meteors*, and 3. *of the Soul*, which are not mentioned in his Catalogue, and therefore who need doubt but these are Suppositious? For if they had been extant in the daies of *Laertius*, would he have concealed them? or could he have had no suspition of them, who was so diligent to know, and commit to posterity both the lives and books of the Philosophers? And it appears that when *Ptolomæus Philadelphus* did erect that huge Library at *Alexandria*, using the help and pains of *Demetrius Phalereus*, who was a *Peripatetick*, This man, as he did promise great rewards in the Kings name to those that brought books from any where, so he hath not thought those to be neglected which were said to be *Aristotles*; And therefore *Ammonius* writeth, that many books were brought under the hope of gain bearing the title of *Aristotle*, that notwithstanding were spurious and none of his: and therefore who can be certain in such a caliginous *Labirynth*, to know whether these that we have be truly his, or but false and adulterate? seeing many of them are suspected rather to belong to *Architas* than to *Aristotle*.

3. Seeing according to *Laertius*, and some others, that there were many that bore the name of *Aristotle*, might not

not easily all their works be ascribed to this one *Stagyrite*? as in other things it often falls out: for there were many *Jupiters*, yet all things were ascribed to one son of *Saturn*, and there were many called by the name of *Hercules*, yet all their labours made onely one son of *Alcmena* famous. And did not *Theophrastus* and others (who are said to have imitated the stile of *Aristotle*) compose many books under the same title with those of his (as may be gathered from *Laertius Catalogues*) & so might not they in continuance of time have the inscription creep in, one instead of the other? And is it not controverted whether the beginning of the *Metaphysicks*, and the books of plants, and others belong to *Theophrastus*, or to *Aristotle*? And doth not *Cicero* in his books *de finibus* witness that those books *Moralium Nichomachiorum*, which are commonly ascribed to *Aristotle*, are to be attributed to *Nichomachus* his son? And lest any should object (as they usually do) that they are written in his stile and methode, doth he not conclude, *Non video, cur non potuerit patri similis est filius, I do not see why the son might not be like the Father*? And are there not some books amongst those vulgarly accounted the works of *Aristotle*, as the book of plants, that of the world to *Alexander*, and others, that none dare positively assert to be *Aristotles*? Neither is this any new thing in him, for the same suppositition of books hath happened to *Plato*, *Cicero*, *Seneca*, *Origen*, *Cyprian*, *Hierom*, *Augustine*, and other great men.

4. Let it be concluded, that we have the books which may justly and legitimately be ascribed to *Aristotle*, yet notwithstanding how dubious is it to know in these books what is properly and truly his, and what is not? For *Strabo*, *Plutarch*, and others, do memorate that when *Theophrastus* had left *Neleus Scepsius* heir to his own, and *Aristotles* Library, their books lay long hidden in the ground, and that many years after, when they were corroded with worms, and moths, and almost consumed, and wasted, they were digged up and sold to *Apellicon Teius*, who took care to export them to *Athens*, and took upon him to amend and

correct

correct the defects according to his own mind: And when not long after *Lucius Sylla* had carried them to *Rome* out of *Greece*, he committed them to *Tyrannion* the *Grammarian*, that he might correct and alter them; and so that he added detracted or changed what he judged *Appellicon* had depraved, or might better agree to the mind of *Aristotle*. And that afterwards succeeded *Andronicus Rhodius* who again turned all upside down and altered as he thought fit. Therefore how shall we believe that the pure text of *Aristotle*, passing the hands of so many Correctors (that I may not more truly say Corruptors) come to our hands without being viciated in innumerable places? first suffering by the injury of time, and then by the conjectures of so many Censurers. Especially if to this we shall add, the variety, oscitancy, and unskilfulness of transcribers, we shall find that in this author, which is common to almost all, that of one and the self-same place there will be various lections, that it will be hardly possible to divine, which are the primary and proper footsteps of the author.

5. But let this also be given, that there is nothing contained in his works but what is his own, yet the style and manner of *Aristotles* writing doth render his doctrine so uncertain, and obscure, that to fish out his meaning there is need of a *Delian* Urinator. For though he might be copious and elegant in easie matters, yet in things that are more difficult, and which require more perspicuous explication, he is so ambiguous, brief, lame, and intricate, that he seems from thence to have raised plenty of matter, and occasion to make his Sectators wrangle and conjecture. Therefore *Atticus* did worthily, and appositely compare him, and his writings, to that black humour pouted forth by the Cuttle fish, under which lying hid she escapeth catching; for he seems to have spoken so on purpose, as though he be taken in some sense, yet in another he makes an escape, and so eludes the Catchers. And some of his followers do acknowledge that he hath used this kind of equivocal speaking of purpose; but what need we any further witness, behold *Aristotle* himself openly declaring that he used this af-

affected obscurity in his *Physicks*, for labouring to consolate *Alexander* complaining that he had divulged them, he saith, *Scripsisti ad me de libris Auscultatoriis, existimans in arcano custodiendos fuisse. Scito igitur ipsos editos, et non editos esse. Cognosci enim, percipique ab iis tantum poterunt, qui nos audierint.* *Thou hast written to me touching my books of Auscultation, thinking that they were to have been kept in secret. Therefore know that they are published, and not published. For they can onely be understood, and perceived of those who have heard us.* Which things being thus, we may marvail to what end they have called and accounted him as a *Dæmon*? for verily he hath imitated the cunning of a *Cacodæmon*, who is said to speak by his Prophets and *Sibylls* after such a manner, that his words may be used in divers and contrary senses: is this the honour of *Aristotle*, or the glory of the *Schools*?

6. But further let it be conceded that *Aristotle* hath spoken, and written perspicuously, yet nevertheless his doctrine is left very uncertain: For he for the most part still useth a *Rhapsodie*, and is a great Compiler of other mens works, and that without taking time to digest or censure all things in them, so that it is difficult to discern when he produceth any thing of his own, when of another mans. And therefore who is there, who when he perceives himself to be urged and pressed with any place in *Aristotle*, may not oppose, and say, that it is not he that speaks there, but some of the antients under his person, and so never be without a subterfuge, and way for evasion? Again, it is not seldome that he doth openly declare the fallaciousness, and uncertainty of his doctrine by inserting of Adverbs of doubting, as in his book of the *Categories* speaking of Relatives he saith, *Fortassis autem difficile sit de rebus hujusmodi vehementer asserere: Perhaps it is difficult to affirm any thing vehemently of such like matters.* And further where he hath reckon'd up the four species of quality, he addeth, *Fortassis quidem igitur alius quispiam apparuerit qualitatis modus, sed ferè qui maximè dicuntur, hi sunt.* *For perhaps truly some other mood of quality may appear, but these are almost all*

that

that are especially spoken of. There are many such like places which I omit, these being sufficient to manifest the man to be no other but such an one as the author of the censure commonly prefixt before his works, who after many commendations given him, saith, *Accedebat ad hæc, ingenium viri tectum et callidum, et metuens reprehensionis, quod inhibebat eum, ne proferret interdum aperte quæ sentiret. Inde tam multa per ejus opera obscura, et ambigua. There happened to these things, the close wit of the man, and crafty, and fearing reprehension, which did inhibit him, that sometimes he durst not utter openly those things which he thought. From whence it is that so many things, throughout his works, are obscure and ambiguous.*

7. But let us omit these, and give it for granted that *Aristotle* hath uttered his opinion plainly, and doth speak altogether *Dogmatically*, and without hæsitation; will it not still remain of necessity that his doctrine is uncertain and obscure, seeing it is beset with continual altercations amongst the *Peripateticks* themselves, differing about the interpretation of his text? neither is there any possible hope of their reconciliation, but that we may sooner see a conjunction of the poles of heaven, one holding this, and another that, and yet all affirming that their meaning was *Aristotles* mind: for when they make the question, whether, and what kind of matter he did ascribe to the heavens, some affirm that he did attribute matter to the heavens, and some deny that he did attribute any: some hold that he appropriated the same matter to the heavens, that he did to the elements, and other some affirm that he gave them a divers matter. Wherefore suppose any one not preoccupated desired to be instructed in the *Peripatetick* doctrine, what should he do, or whither should he turn himself, when he should see about some one difficulty propounded, divers and sundry opinions differing one from another, and *Aristotle* wrested against himself? would he think it possible that *Aristotle* at one and the self-same time, did hold things absolutely contrary one to another?

8. And if all this were granted that the *Aristotelians* did

did not disagree amongst themselves, and had a genuine interpretation of *Aristotles* mind, yet would there remain much doubt and uncertainty in his doctrine: because in it there are many things omitted, and insufficient, many things *Tautological*: and superfluous, many things false, impious, and calumnious, and many things repugnant, and contradictory, which we shall make out hereafter, and so pass them in this place.

3. Neither ought the throne be yielded to *Aristotle* alone, nor his *Philosophy* onely adored, and admitted, because in his writings innumerable things are wanting, and defective, that are essentially necessary to the compleating of *Physical knowledge*, which we shall something at large demonstrate.

1. I shall pass by the defects in his *Organical* learning, as having been touched before when we handled *Logick*, and onely come to open his defects in *Physicks*: And here first is required a definition of *Physick*, the declaration of the subject matter is wanting, a general partition, and distribution is required: neither is it shewn to what end, how or in what order he will proceed to speak of the heavens, the meteors, the animants, and the like, which all belong to *Physical* speculation, this is all the order of this great Methode-monger. And when he had said it was to be proceeded *ex notioribus nobis ad notiora naturâ*, and that even by common sense singulars are better known to us, and universalls more known in nature, yet presently after he preposterously concludes, *ab universalibus ad singularia procedendum*.

2. What a brave definition doth he give of Nature, to wit, *Natura est principium, & causa motus, & quietis ejus, in quo ineſt primò et per se, et non secundum accidens*, in which there are more defects and errours than words? For hereby nature is not distinguished from the efficient cause, art may be a principle as well as nature, and many more which I shall not stand to recite, seeing the most acute, and learned *Helmont* hath demonstrated no fewer than thirteen errors, or defects, in this so short a definition, and so concludeth, Arist. l. 2. Phy. Hel. lib. Phys. Arist et Gal. ign.

deth, *Atque tandem valdè anxius, neſcit quid vocet, aut vocare debeat naturam, naturalis auſcultationis ſcriptor. And at the length being very anxious, the writer of natural auſcultation is ignorant what he ſhould or ought to call nature.* And alſo confutes ſome other deſcriptions of *Ariſtotle* with many pregnant and undeniable arguments: and in the moſt of all his diviſions and definitions, as may be ſeen in his definition of motion, and of alterarion, and divers others, which were tedious and fruitleſs to reckon up.

Pet. Gaſ. exer. 5 contr. Ariſt.

Ariſt. l. 3 Phy. cap. 3.

3. His proofs and demonſtrations for the moſt part have the ſame lameneſs with the reſt, *ex uno diſce omnes.* He goes about to prove the world to be perfect, becauſe it doth contain bodies, and that a bodie is perfect becauſe it containeth trinal dimenſion, and that trinal dimenſion is perfect, becauſe three are all things: but three are all things, becauſe if they be either one, or two, yet we have not named all things; but as ſoon as there are three, we may call them all things. O how egregious! O how ſuper-ſufficient is this proof! O how wonderfully beſeeming ſo great a *Philoſopher*! O how fit is he to be the Prince of Learning, and the *Dictator* in the *Academies*! And the ſame abſurdities may be ſeen every where in his writings.

Ariſt. lib. de Cœl. et Mun. ca. 1, 2, 3, 8, 9, 10. prim. lib.

4. The like appears in his argumentations againſt the antient *Philoſophers*, whom he ſeems every where to confute, calumniate and contradict, but with the ſame imperfections and defects, as to inſtance in two or three. He taxeth *Democritus*, *Leucippus*, and others very inſufficiently, who did hold that generation was by congregation, and that no continuum was compounded of indiviſible things, which they ſpeaking of *Phyſical* impartibilitie, he impugns as of *Mathematical*. Doth he not unworthily tax *Plato*, that beſides matter and Idæa, he had put no efficient cauſe of generation? when he himſelf beſides matter and form, rather hath put privation, which is a *non ens*, than any efficient cauſe: *Quapropter cum Ariſtoteles neſciat naturam, proprietates, itemque generationum cauſas, ac quidditatem; quis non judicaverit, ex aridis ciſternis Scholorum aquas Philoſophiæ hauſtas hactenus? Octo enim libri auſultationum Phyſicarum*

Ariſt lib 1. de Gen. et Cor. cap. 2, 9.

Helm. lib. ante citato.

Physicarum, somnia et privationes, pro naturæ cognitione exponunt. Wherefore seeing Aristotle *is ignorant of nature, proprieties, and also the causes, and quiddity of generations; who shall not judicate the waters of Philosophy hitherto drawn from the drie Cisterns of the Schools? For the eight books of Physical auscultations, do expound dreams, and privations, instead of the knowledge of nature.*

5. This *Philosophy* is meerly verbal, speculative, abstractive, formal and notional, fit to fill the brains with monstrous and airy *Chymæras*, speculative, and fruitless conceits, but not to repleniſh the intellect with ſound knowledge, and demonſtrative verity, nor to lead man practically to dive into the internal center of natures abſtruſe, and occult operations: But is only converſant about the ſhell, and husk, handling the accidental, external and recollacious qualities of things, confuſedly, and continually tumbling over obſcure, ambiguous, general and equivocal terms, which are onely fit to captivate young *Scioliſts*, and raw wits, but not to ſatisfy a diſcreet and wary underſtanding, that expects *Apodictical*, and experimental manuduction into the more interiour cloſſets of nature. Here in the *Schools* is found no ſuch thing, but objurgations, and clamours, fighting and contending *Andabatarum more*, like blind, or madmen, not knowing where they wound others, nor where they are hurt or offended themſelves:

6. And whereas names ſhould truely expreſs notions, and they be congruous to things themſelves, the *Ariſtotelian Philoſophy* leads us into an endleſs Labyrinth, having nothing in manner but *Syllogiſms*, or rather *Paralogiſms* to ſtatuminate and uphold the Fabrick thereof: for they have altogether laid aſide Induction as too mechanical and painful, which onely can be ſerviceable to Phyſical Science, and have invented and introduced words, terms, definitions, diſtinctions, and limitations conſonant enough amongſt themſelves, but no way conſorting or ſympathizing with nature it ſelf. *Scientiæ enim, quas nunc habemus, nihil aliud ſunt quam quædam concinnationes rerum antea inventarum; non modi inveniendi aut deſignationes novorum operum* Verulam. Nov. Org. Aphor. 8.

rum. For those Sciences that we have now, are nothing else but certain concinnations of things formerly found out; not the wayes, or designations of inventing new works. And one thing more, instead of establishing the mind in Physical truths, most usually they confound the judgement with Mathematical terms, which in *Aristotles* writings is no small error: for though the Mathematicks be exceedingly helpful to Natural *Philosophy*, yet is confusion of terms very hurtful; for if a Mathematical point or superficies be urged in a Physicall argument it will conclude nothing, but onely obfuscate, and disorder the intellect.

7. This *School Philosophy* is altogether void of true, and infallible demonstration, observation, and experiment, the only certain means, and instruments to discover, and anatomize natures occult and central operations; which are found out by laborious tryals, manual operations, assiduous observations, and the like, and not by poring continually upon a few paper Idols, and unexperienced Authors: As though we could fathome the Universe by our shallow imaginations, or comprize the mysteries of mother nature in the narrow compass of our weak brains; or as though she would follow us into our Chambers, and there in idlenesse communicate her secrets unto us; no verily, *Dii bona sua laboribus vendunt*, ease and idleness are not the way to get knowledge. Therefore here I shall shew what noble parts of Physical knowledge have been, and are neglected by the Schools, onely becaus they abhor taking of pains, and think they can argue Dame Nature out of her secrets, and that they need no other key but *Syllogisms* to unlock her Cabinet.

1. Therefore that noble, and almost divine Science of natural *Magick*, is by them not only repudiated, abominated, and prosecuted with fire and sword, but also the very name seems nauseous and execrable unto them; so little have they done either to advance learning, or to vindicate truth. A great wonder that men that profess themselves almost ignorant of nothing, and think themselves the most skilful wordmen or *Logodædalists* in the world, should either not

understand

understand or be unwilling to acknowledge that the word *Magick* was in its primary and proper acceptation, taken in a good and honourable sense, and appropriated to those that the world accounted most wise and learned: and never was abusively taken, until many Impostors, and knaves did abuse and pervert that so noble a science, as though the name of *Doctor* were dishonourable, or unworthy to be an epithite for the able and learned, who have justly merited and taken that degree, because every Montebank Emperick and Quacksalver, have usually that title attributed unto them. Was not *Magick* amongst the *Persians* accepted for a sublime Sapience, and the science of the universal consent of things? And were not those men (supposed Kings) that came from the East styled by that honourable name Μαγοὶ, *Magi*, or *Wisemen*, which the Holy Ghost gives unto them, thereby to denote out that glorious mystery of which they were made partakers by the revelation of that spirit of life and light. Neither do I here *Apologize* for that impious and execrable *Magick*, that either is used for the hurt and destruction of mankind, or pretends to gain knowledge from him who is the grand enemy of all the sons of *Adam*, no, that I truly abominate, *Quia* (as learned *Mirandula* saith) *pendet ex manu hostium primæ veritatis, potestatum harum tenebrarum, quæ tenebras falsitatis malè dispositis intellectibus obfundunt. Because it dependeth upon the hand of the enemies of the primitive verity, of the powers of these darknesses, which do infuse the tenebrosities of falsity into evilly disposed intellects.*

Jo. Bapt. Port. mag. natu. l. 1. cap. 1.

Matth. 2. 1, 7.

Jo. Pic. Miran. Con. mig. nu. 26.

But that which I defend is that noble and laudable Science, *Quæ cognitionem formarum abditarum ad opera miranda deducat, atque activa passivis conjungendo, magnalia naturæ manifestet; which leadeth cognition of occult forms unto wonderful works, and by conjoining actives to passives, doth manifest the grand secrets of nature.* And indeed is that worthy, and wonderful science, not unbeseeming the noblest person, or greatest Scholar, and is that sublime knowledge whereby the wonderful works of the Creator are discovered, and innumerable benefits produced

Verul. l 3. de Aug. Sci. c. 5.

to

to the poor Creatures. *Mirabilia artis Magicæ non sunt nisi per unionem & actuationem eorum, quæ seminaliter, & separatæ sunt in natura.* *The wonderful things of Art Magick are not brought to pass, except by the union, and actuation of those things that are seminally, and separately in nature*: So that indeed, *Magicam operari, non est aliud nisi maritare mundum.* *To operate by Magick is nothing else but to marry the world*, that is, fitly and duly to join and connex agents to their patients, masculines to fœminines, superious to inferiours, Cœlestials to Terrestrials, that thereby nature may act out her hidden and latent power. And this is that which the greatest Doctor need not be ashamed of, whether *Physician* or *Philosopher*, but that which is commendable both before God and man, and that wherin if the Schools had been exercised, their works and fruits would have been more manifest, and they then owned not as the disseminators of vain controversies, and frivolous disputes, but as the true interpreters of nature, Patriots of true learning, and benefactors to mankind. But I pray God they may repent and amend, and imbrace the truth, and also practise it.

Jo. Pic. Miran. loco citato.

2. The next thing I shall mind them of, as one of their greatest defects, is that sublime, and never-sufficiently praised Science of *Pyrotechny* or *Chymistry*; which though it hath suffered much through the corruption of time, and the wickedness of covetous Impostors, and ravenous Harpies, who gaping after mountains of Gold, do either suck the purses of others as greedy as themselves, or else do willingly suffer themselves to be deluded, and circumvented by these broilers and smoak-sellers, and so bring an injust infamy upon this so profitable and laudable an art. And though in former times it was had in honour by *Trismegist*, *Geber*, *Raymund Lully*, *Arnoldus de villâ novâ*, *Roger Bacon*, and many others, yet was it for many ages in a manner buried in oblivion, or banished to the Monastick cells, until *Basilius Valentinus*, *Isaac Hollandus*, and *Paracelsus* that singular ornament of *Germany*, did revive and restore the same, and since more cleerly manifested by him, who is justly

justly stiled *Philosophus per ignem*, and many other famous men. The benefits of which are now so openly known, especially the common and vulgar part of it (though the grand mysteries are hid in the brests of those who are truly called *Adepti*) and so much written by the elaborate pens of many learned and industrious men therein, that it would be needless to relate its transcendent uses, and excellencies: it being in a word that Art that doth help more truly and radically to denudate, and discover the secret principles and operations of nature, than any other in the world, and I dare truly and boldly say, that one years exercise therein to ingenious spirits, under able Masters, will produce more real and true fruit, than the studying *Aristotelian Philosophy* hath brought forth in many centuries. O that the Schools therefore would leave their idle, and fruitless speculations, and not be too proud to put their hands to the coals and furnace, where they might find ocular experiments to confute their fopperies, and produce effects that would be beneficial to all posterities. I will only mind them of this one rule. *Discenda primum ergo digestiones, distillationes, sublimationes, reverberationes, extractiones, solutiones, coagulationes, fermentationes, fixationes, & omne quod ad opus hoc instrumentum requiritur, cognoscendum est usu, prout vitra, cucurbita, circulatoria, gallinarum ova, terrea vasa, balnea, furni ventales, reverberatorii similesq;, nec non carbones atque tenacula: sic in Alchimia medicinaque proficere poteris.* Neither despise this counsel because the author is no friend to *Aristotle*, nor be ashamed to cast off thy fine clothes to work in a laboratory, for without this thou mayest wax old in ignorance, and dy with guilt, because thou hast served thy generations with no better stuff than *Aristotles* dreames, and *Scholastick* fables. *Nam utut naturale ingenium, & acumen judicii, Philosophus habeat, nunquam tamen ad rerum naturalium radicem, aut radicalem scientiam admittitur, sine igne. For howsoever a Philosopher may have a natural wit, and acuteness of Judgement, notwithstanding he is never admitted to the root, or radical Science of natural things, without the fire.*

Paracel. li. de. Tinct. Phys.

Helm li. Phys. Arist. et Gal. ign.

3. Another thing of no leſs weight than the former I ſhall denote unto them, which is that part of natural *Philoſophy*, that concerns medicine, which of all other is moſt neceſſary, and behooful for conſerving and reſtoring the health of man; and yet is no leſs imperfect, and defective than any of the reſt.

For firſt it is turned into a way of meer formality, flattery, cunning, craft and covetouſneſs, nothing being ſo much ſought after by its profeſſors as popular applauſe, repute, and eſteem with rich and mighty men, that thereby the larger fees may be drawn from them, while in the mean time, the poor are neglected and deſpiſed. Is this the office of a Phyſician? is only riches got by hook or crook, whether the Patient receive benefit or none, live or dy, the ſole end of their profeſſion? and muſt theſe things have the countenance of Law, and confirmation by Charters? muſt theſe things be applauded and cryed up, while the ſincere and faithful endeavors of ſimple and honeſt-meaning men, are diſdained and trampled upon? But the world hath alwaies loved deceivers, and therefore muſt be deceived.

Secondly, the rule being moſt ſure, that *ubi deſinit Philoſophus, incipit medicus*, it muſt of neceſſity follow, that if *Philoſophy* be falſe, uncertain, and ill bottomed of it ſelf, then the medicinal knowledge that is built thereon and drawn from thence, muſt needs be faulty and ruinous. Now how falſe the *Ariſtotelian Philoſophy* is in it ſelf is in part made cleer, and more is to be ſaid of it hereafter, and therfore truth and experience will declare the imperfection of that medicinal knowledge that ſtands upon no better a baſis. For *Galen* their great *Coryphæus* and *Anteſignanus* hath laid down no other principles to build medicinal skill upon, than the doctrine of *Ariſtotle*, as that all bodies mixt are compounded of the four Elements, and that the total parity or diſparity, temperament, complexion, and conſtitution of all bodies do ariſe from the equal or unequal conflux and commixture of theſe four: and that from theſe do reſult four prime qualities, and four humours, and that the abounding, defect, repugnancy, or alteration of hele are

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the causes of all diseases. *Mirum sanè, quantum in his rixatum, et scriptum sit: ac miserandum, quantum hæc laxa nugarum somnia, mundum hactenus circumvenerint.* *I truly it is a wonder how much hath been disputed and written in these things: and it is to be commiserated, how much these loose dreams of trifles, have hitherto circumvented the world.* Jo. Bapt. Van Helmont. Elem.

For this same author makes it good by undeniable arguments and experiments, that there are not four Elements, nor humours, in *rerum natura*, and hath said enough, sufficiently to confute and overthrow the whole Fabrick of the *Galenical* learning, which here I forbear to insert. And therefore it is very strange that the Schools, nay in a manner the whole world, should be inchanted and infatuated to admire, and own this ignorant *Pagan*, who being ambitious of erecting his own fame, did traduce, and darken the writings of those that preceded him, and pretending to interpret and open the doctrine of learned *Hippocrates*, he altogether obscured and perverted the same: And yet can the Schools be so wilfully mad to adore this Idol, and follow this blind guide.

Thirdly, if the ground of *Galenical Physick* had been sound and firm, and that it were the true and certain way both to find out the causes, and to cure diseases; yet notwithstanding hath it been but loosly prosecuted, and smally promoted, seeing for the space of so many hundred years, there is not by the Schools found out any more certain, safe, or easie way to cure diseases than was in the daies of *Hippocrates*, and *Galen*: It is very strange that it should grow up and flourish with them, and never since come to any more perfection, when it is usually observed that nothing is *simul & semel* invented and perfected. For it is plain that in *Botanical* knowledge nothing of value is found out or discovered since the daies of *Dioscorides*; for though some plants be now found out that were not then known, and many species of others also, and their cuts and figures more perfected, as beside much confusedly heaped up concerning their qualities of heat and cold, driness and moisture; yet is nothing more

added by real experience, and diligent observation of their specifick vertues, and intrinsick properties, so that in regard of the vegetable Kingdom the art of medicine hath got little advance.

Fourthly, though medicinal knowledge have received some melioration especially in the *Anatomical* part, wherein men have laboured with much acuteness, diligence, and observation, so that this part seems to be growing, and arising towards the *Zenith* of perfection, especially since our never-sufficiently honoured Countryman Doctor *Harvey* discovered that wonderful secret of the bloods circulary motion: yet for all this there comes small advantage by it in practice, and application, for the more certain, safe, and easie curing of diseases: for though it bring great satisfaction to a speculative understanding, and help to cleer many intricate doubts, yet doth it little to remove dolor, danger, or death.

And moreover though it be grown to a mighty height of exactness, in vulgar *Anatomy* and dissection of the dead bodies of men, or the living ones of beasts, birds, and fishes; yet is it defective as to that vive and *Mystical Anatomy* that discovers the true *Schematism* or signature of that invisible *Archeus* or *spiritus mechanicus*, that is the true opifex, and dispositor of all the salutary, and morbifick lineaments, both in the seminal *guttula*, the tender *Embrio*, and the formed Creature, of which *Paracelsus*, *Helmont*, and our learned Countryman Dr. *Fludd*, have written most excellently.

Rob. de Fluct. lib de Anatomia mystica.

Fiftly, the most excellent art of *Chirurgery*, though much advanced by the help of *Anatomy* in all that belongs to manual operation, or the use of instruments; yet in the curing of great and dangerous sores, as the *Lupus*, *Cancer*, *Fistula*, *Carcinoma*, *Elephantiasis*, *Strumaes*, virulent and malign Ulcers, and the like, it is much defective, and can perform little, without mineral and *Chymical* medicaments. Not because nature and providence have ordained no remedies for them, but because of the sloathfulness and negligence of professors and artists, who sit down contented with *Galenical*

cal medicaments, thinking there is nothing of greater virtue, and operation than they; and so become slaves and captives to some few Authors, whom they think it not lawful to relinguish, or that natures whole mysteries were comprized in their paper Monuments, and no search further to be made: Not knowing that their scrutiny should be through the whole *Theatre* of nature, and that their only study and labour ought to be to acquire and find out salves for every sore, and medicines for every malady, and not to be inchained with the formal prescriptions of *Schools*, *Halls*, *Colleges*, or Masters, but to seek continually that these things might be made known unto them, and not to imagine it is sufficient to have served an appenticeship to it as to a trade, except they arrive at higher attainments. *Quia medicus ad imaginem dei agere ac laborare jussus est, constat ipsum non nugacibus rebus, sed secretioribus Magiæ ac Cabalæ studiis operam suam locare debere: non enim ut Jurisconsultorum vel Physicorum scientia, sic et Medicina humanis speculationibus comprehendi potest, cum ipsa supra omnes artes admirabilis ac occulta existat.* Paracel. lib 4. de caus. Luis Gal. Cap 9. *Because the Physician is commanded to act, and labour according to the image of God, it is manifest that he ought not to place his pains in trifling things, but in the more secret studies of Magick, and Cabalistick Science: for not as the knowledge of Lawyers and Naturalists, so also can Medicinal skill be comprehended by human speculations, seeing it is admirable and occult above all arts.* Therefore what great error, and how haynous a crime is it to leave the great book of the *Macracosm*, nay and the writings of others, only to adhere to the doctrine of ignorant, wicked, malicious, and blind *Pagans*? I shall onely add this, *Adeoque cum omne donum bonum, nedum virtutum, sed & cognitionum, descendat à patre luminum; quis poterit à Scholis Gentilitiis scientiæ medicæ tesseram edisscere? Dominus enim creavit medicum, non Schola. Therefore seeing every good gift, not onely of vertues, but also of Sciences, doth descend from the Father of lights; who can perfectly learn the sum of Medicinal knowledge from the heathenish* Hel de prom. Author.

Schools? For the Lord hath created the Physician, not the Schools.

4. There remaineth diverse excellent discoveries of many mysterious things in nature that do properly belong to *Physicks*, which yet the Schools take small or no notice of, and as little pains in, either to know, teach, or improve them; and so are a witness against them of their sluggishness, and deficiency of their too-much-magnified *Peripatetick Philosophy*.

As first, they pass over with a dry foot that laudable, excellent, and profitable science of *Physiognomy*, which hath been admired, and studyed of the gravest and wisest Sages that have been in many generations: which is that Science which from and by certain external signs, signatures, and lineaments, doth explicate the internal nature and quality of natural bodies either generally or specifically. And this so necessary a knowledge both in the genus and species of it is altogether omitted by the School; they understand and teach nothing of Cælestial signatures, which are in some measure made known by the quantity, light, colour, motion, and other affections of those bodies: They teach nothing of *Subcælestial Physiognomy*, whether Elementary, *Meteorological*, or *Mineralogical*, but are utterly ignorant in all these, as also in *Botanical*, and *Anthropological Physiognomy*, contenting themselves with a few frivilous, false and formal definitions, and notions, and so never seek to penetrate into the more interiour nature of things, by which it comes to pass that they know little in the vegetable, and animal kingdomes, and least of all in the subterranean, or mineral; and but that *Paracelsus*, *Crollius*, *Quercetan*, *Baptista Porta*, and some others had taken pains in it, there had no foot-steps of it almost been visible. And my Lord *Bacon* doth reckon also as defective the interpretation of natural dreams; for though *Aristotle* himself hath said something of this, yet those that pretend most to admire and honour him, have taken as little pains in this as the rest, to improve it to the glory of their great Master.

Vetul. lib. 4. de Aug. Sci. ca. 1.

Arist. lib. de Som. et vig. cap. 3.

Secondly, they are as ignorant in the most admirable, and

and soul-ravishing knowledge of the three great *Hypostatical* principles of nature, *Salt*, *Sulphur*, and *Mercury*, first mentioned by *Basilius Valentinus*, and afterwards clearly and evidently manifested by that miracle of industry and pains *Theophrastus Paracelsus*. Which however the *Schools* (as hating any liquor that is not drawn out of their own Cask, and despising all things that come by toyl and labor) may sleight and contemn it, and please themselves with their ayery *Chimæra* of an abstracted and scarce intelligible *materia prima*, or *Hyle*, which is neither *planè ens*, *nec non ens*, and think to make fools believe their Masters description of it, that it is *neque quantum*, *neque quale*, *neque quid*, *neque quicquid eorum quæ cernuntur*, and so the *Delphick* devil cannot expound it, nor *Sphinx* nor *Oedipus* be able to unriddle it; Is notwithstanding so cleer, certain, and *Apodictical* a truth, that all the *Academies* in the Universe will never be able to eradicate, and whose verity is made so evident by *Pyrotechny*, that he must needs distrust his own senses that will not credit it; but what avails it to sing to a deaf man? And though *Helmont* with the experiments of his *Gehennal* fire, and some other solid arguments labour the labefactation of this truth, yet doth he not prove that they are not *Hypostatical* principles, but onely that they are not the ultimate reduction that the possibility of art can produce, which he truly proves to be water; yet are the most compound bodies in the universe to be reduced into them, and by that introversion is the secrets of nature more laid open than by all the *Peripatetitk Philosophy* in the world, and if this be not so, let experience speak.

Begnin. Tyr. Chy. c. 2.

Par. de Trib. princ.

Thirdly, what shall I say of that wonderful and most beneficial discovery of the *Magnetical Philosophy*, by our worthy, learned, and industrious Countreyman Doctor *Gilbert*? what rare and unheard-of mysteries doth it disclose? what huge light, and advantage doth it bring to Natural *Philosophy*, and the *Mathematicks*? What helps to Navigation, and almost all other arts, and trades? How vastly is it improved, inlarged, and adorned by those great wits, and unwearied persons, such as *Ridley*, *Carpenter*, *Barlow*, *Ca-*

Gilb. de mag.

Cabæus, and the grand gatherer of all kind of learning *Athanasius Kercherus*? Can the Schools say, or make it good, that in the space of fifteen hundred years they ever invented any such like thing? nay it were well if they had not been, and still were the opposers, contemners, and condemners of all new discoveries, how transcendent, useful, or profitable soever they were.

Kercher. de Arte magn.

Fourthly, what shall I say of the *Atomical* learning revived by that noble, and indefatigable person *Renatus des Cartes*, and since illustrated and improved by *Magnenus Regius*, *White*, *Digby*, *Phocyllides*, *Holwarda*, and divers others? Hath the Schools any thing of like firmness, do they demonstrate after *Euclides* most certain and undeniable way, as *Democritus reviviscens* doth? no surely, all theirs is but like dross and chaff in comparison of this. What shall I say of that notable conceit of the most happy *genius* these latter ages have had, *John Kepler*, of the Continued Emission of raies from the body of the Sun, that causeth all the rest of the Planets to move? Deserves this no further investigation? What shall I say of the *Epicuræan Philosophy*, brought to light, illustrated and compleated by the labour of that general Scholar *Petrus Gassendus*? Surely if it be rightly examined, it will prove a more perfect, and sound piece, than any the Schools ever had, or followed.

Reg. de Fundam. Phys.

Kepler Epit. Astron.

4. The *Philosophy* of *Aristotle* maintained by the *Schools* ought not to be prised so much above others, because in it there are many things superfluous, *Tautological*, frivolous, and needless, as we shall in a few instances make cleerly evident.

For first, omitting many superabundant reiterations, and repetitions in his *Organicks* and *Animasticks*, I shall only touch some few contained in his *Physicks*: as in that much celebrated definition wherein nature is said to be *Principium, & causa motus, & quietis ejus, in quo inest primò, & per se, & non secundùm accidens*. 1. This particle *causa* seems to be put superfluously; seeing every cause is a principle. 2. That of *quietis*; seeing the faculty of Contraries are the same, for that which is the faculty of speaking, and holding

Arist. lib. 2. Phys. cap. 1.

ones

ones peace, is the same. 3. That *ejus, in quo est*, seeing also art is the principle of the motion of the artificer, in whom it is. 4. That *primò*. 5. And that *per se*; for also art is the cause of artificial motion, primarily, and by it self, *quatenus* as far as it is of this sort. 6. That particle, *& non secundùm accidens*, is needless; for wherefore was that necessary seeing before he had put *per se*? I shall omit the rest of his nauseous *Tautologies* in the 3, 5, and 7. chapters of the forcited book, and in the most of the books of *Physicks* following, as obvious to every one that will take pains to examine and consider them.

Secondly, in his book *de Cœlo* he reiterates this, *Simplicis corporis simplex est motus, & simplex est motus simplicis corporis*, as though these two were much different: and there twice or thrice is repeated the probation, that Circular motion doth agree to some body according to nature. The like to which may be seen in the 5, 6, 7, 8, 9, and 12. chapters of the same book, and in all the books following of the same subject. I shall onely name one other, and so pass this point, *in lib. 1. De ortu, et interitu, cap. 6.* He propounds the question of the Elements, whether they be, or they be not? and whether they be sempiternal, or not? As though they had not been agitated in his third *book de Cœlo*, and at last brings in that vain repetition, *est igitur tangens ut plurimùm id, quod tangit tangens: apparet tangens tangere quod tangit, necesse videtur esse quod tangitur tangere*, &c. O how egregiously is this disputed of him who must needs be accounted the *Prince of Philosophers*! O how excellent needs must those disciples be that are taught by so worthy a Master! Arist. l. 1. de Cœl. et Mun. cap. 2.

5. This *Philosophy* ought not so much to be magnified above other, because in it are very many things that are apparently, and absolutely false, to make which appear, I shall onely name two or three manifest particulars.

First he affirms that nothing is contrary to substance, which he again asserts in his *Logick*, and repeats elsewhere, which to me seems absolutely false: for certainly the substance of the fire is contrary to the substance of the water. But thou Arist. lib. 1. Phys. cap. 6.

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wilt say the contrariety is solely in the qualities. But seeing these qualities are every one proper to their substances, and do arise out of them, and accept their *esse* from them: and therefore doth not this also argue contrariety in them? For let the substance be of the same nature on both sides; from whence is it that these qualities do arise rather than others which are contrary unto them? And again in the same chapter it is false that he teacheth that contraries cannot suffer of themselves: For do not cold things strive with hot, and moist things with dry? And do not these qualities mutually beat back, and expel one another.

Secondly, it is false which he affirms *lib.* 2. *Phys. cap.* 7. That the formal, final, and efficient causes are coincident, to wit in respect of the same effect: for how can the father be the same with the essential form of the Son? And it is also false which he defends in the eighth chapter, That art doth not deliberate; otherwise artists do all things rashly. But although the Mason do not deliberate, whether he ought to prepare a foundation rather than an house, Therefore doth he not consult, whether he shall build it now rather than at another time? or whether of this matter, rather than of other? or whether in this manner, rather than in another?

Thirdly, how false is that which he laies down in the 6, and 7. chapters of the third book of *Physicks*, that no number can be given, than which a greater may not be excogitated: but that a magnitude may be given, to wit the world, than which no greater can be excogitated? I pray you why may it not be lawful and possible to conceive a magnitude greater than this world? nay ten thousand times greater, wherein lies the impossibilitie? He also defines there *infinitum* to be that beyond which something alwaies may be taken; but how is that possible to be infinite that hath something *extra se*? or that it can be made infinite by something without it self? These are brave fancies, and fine dreams.

Fourthly, in the 8. book, besides innumerable falsityes that may be observed in the 5, 6, 7, 8, and 9. chapters, that

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is a most signal one, which in the first chapter he labours to build up, of the eternity of motion: that thereby he may make out the ingeniture, and eternity of the world. Let us therefore see with what reasons he can evince, and perswade it. 1. Is this, Motion is the act of a movable thing: Therefore that which is movable hath preceded Motion. I pray you doth he not wound himself with his own weapon, and strangle himself by his own consequence? For if any thing hath preceded Motion: Therefore motion is not eternal. 2. He argues, The thing moving, and the thing moved are either made, or are eternal; But neither can be said to be so. But wherefore cannot the one or both be eternal, and nevertheless without motion? He adds, because this is absurd. An egregious instance truly, and indeed *Philosophical*! for where appears this absurdity? He further urges: If the thing movable had preceded motion, then it had rested: and so another motion had been necessary before, of which that rest had been a privation. Verily as though he who is born blind, ought to have seen in the womb, that blindless might be accounted the privation thereof. 3. He proceeds, Power ought to be neer to the Act. As though stones that have lain hid from the framing of the world under the earth, had not as well power to be framed into an house which is made to day, as they have a few daies before they be digged up. 4. He saith, Time is eternal, therefore Motion also: He confirms the *Antecedent*, 1. Because all *Philosophers*, except *Plato*, do affirm it. As though the matter were pleaded in the Court, where voices are numbred? yet some have accounted *Plato*'s judgement more than a thousand; but this were to try things by authority, not by truth. 2. Because time is not *sine nunc*: but every *nunc* is the beginning of the sequent, and the end of the præcedent time. As though there could not be a *nunc* first, and last; if either the motion of heaven hath begun, or also if we believe that motion is not measured by time, which were not hard to demonstrate.

5. I shall onely instance in one place more, and that is *lib.* 1. *de Cœlo cap.* 3, *cap.* 4. There he assumes, and endea-

vours to prove, that Circulary motion hath nothing contrary unto it: what if of two wheels or orbs, the one were moved towards the Orient, and the other towards the Occident, were they not to be said to be moved towards contrary parts? and is not this to have something contrary unto it? nay may not the motion of something in a straight line, be contrary to motion that is circular, seeing all motion is considered in relation unto the term, or point from whence, and unto which it moves? and how this cannot be possible, to me seems neither probable nor possible. And though I have but taken these few things to instance in, yet were it no hard matter (but that it belongs not to my present purpose) to evert the whole ground and fabrick of his *Philosophy*, and that with arguments unanswerable, and infallible, but these are sufficient for this place and purpose.

6. *Aristotle's ipse dixit*, or the *School's sic habet Aristoteles*, ought no longer to pass for oracles, nor his tenents for truths before others: because innumerable things in his *Philosophy* do contradict, and are *diametrically* contrary; and that I may make out what I say, I shall call in for witness his own words, and instance in some few particular places, that it may be manifest how inconstant and wavering he was in his own opinions.

First, in his book of *Categories* there is plain contradiction, seeing he makes ten: and notwithstanding elsewhere sometimes three, sometimes six, sometimes eight. He saith the first substance is rather substance than the second, and not long after he affirmeth that the property of substance is to receive more and less. He makes Time a species of Continued quantity: and notwithstanding in the 4 book of *Physicks*, he will have it to be Number, which is Discrete quantity. He also indeavours in the 1 *book Priorum Analyticorum*, to demonstrate the definition of the figures, and in the 2 after teacheth that definition cannot be demonstrated. In the 1 *book Posteriorum* he will have us in Demonstration to proceed from things more known to us: and for all that he defines demonstration to be that which proceeds from Causes, but causes are more unknown to us than effects; and in the same

same books he hath many such like, which for brevity I omit.

Secondly, in his first book of *Physicks* he impugneth that immovable principle of *Parmenides*, and *Melissus*: and after in the 8 book he proveth that there is one immovable principle of motion. He teacheth in the fifth chapter, that Contraries are not made, by course, of themselves, and not long after he holdeth, that whatsoever is generated, is generated of its contrary, and that whatsoever is corrupted goes into its contrary. In the second book, and seventh chapter, he disputeth against *Empedocles* affirming that the works of nature are made by chance; And yet confesses that Monsters are the misses and lapses of nature: And in the seventh book of *Metaphysicks* the seventh chapter, he holdeth that those things that do grow without seed are made casually, from whence also in the 3 *de Animâ* the 12. *chapter*, he saith, *Quæ naturâ sunt, propter aliquid sunt, aut casus eorum, quæ sunt propter aliquid.* And many other of the like sort, from which I purposely supersede, these being sufficient to make good the assertion.

Thirdly, one more may be joined to these out of his book *de Cœlo* the 2 *chapter*, where he saith, that every natural body is movable: And yet for all that in the third chapter, and more expresly in the fourteenth of the second book, he contendeth that the earth doth rest immovable in the center of the world. In the seventh chapter in the words cited not long before he altogether supposeth the heaven not to be animated: and notwithstanding he expressely saith it is animated in the second book, and second chapter; and also the first *de anima* the third chapter, and elsewhere. In the second book, and second chapter, he holdeth that a sempiternal motion is in God: and in the eighth of the *Physicks* he maintaineth the *primum movens* to be immovable, which is God: In the eight he saith the heaven is not an Organical body, and notwithstanding (as it is already seen) he hath made it to be indued with a Soul: For the soul, as he defines it, is the act of an organical body: as also in the twelf he saith, *Actionem astrorum talem esse, qualis est plantarum, & animalium.*

But of these things enough; by all which (I conceive) it is cleerly manifest that the *Peripatetick Philosophy* ought not to be preferred before all other, nay rather to be utterly exterminated, and some better introduced in the place therof, and that is the thing was attempted to be proved.

Chap. VII.

Of Metaphysicks, Ethicks, Politicks, Oeconomicks, Poesie, and Oratory.

THough there be something in the most of these, that might tollerably pass, yet are many things in them so useless, false, uncertain, superfluous, wicked and defective, that they stand in need of reformation, melioration, or eradication, as we shall shew of every one of them in their order.

1. For the *Metaphysicks*, which they call their *Philosophia prima*, and do usually define it to be *Scientia entis, quatenus ens est*, the abuse and vanity of it appears in this: That it being nothing else but an abstract consideration of things by way of prescision, or cutting off from all other cocomitant cogitations, and so to weigh and examine the things nudely and barely under the respect of their being, all other notions there about being separate from it, doth bring no better instruments, nor effective means for the discovery of truth, than the weak and bare operation of the Intellect, or indeed of Phantasie, or the Imaginative faculty, and therefore no marvail that it hath spider-like weaved forth so many slie and cunning Cobweb-contextures of slender conceits, and curious niceties, fit for nothing but to insnare and intangle: and hath been so luxuriously petulant in the fætiferous production of so many monstrous, fruitless, and

vain

vain Chimæras. For they holding the ſoul to be *tabula raſa*, in which nothing is inſculpt, and that Science comes not by *reminiſcence*, or *reſuſcitation*, but meerly acquiſitively *de novo*, and that there is nothing in the Intellect that hath not firſt ſome way or other been in the Senſes, then muſt it needs follow that the operations of the Intellect are but weak means to produce *Scientifical* certitude, and ſo *Metaphyſical* learning but barren and fruitleſs.

2. It hath neither laid down, nor aſſumed any certain principles, that are neceſſary or helpful to promote Science; for whereas it obtends this for a maxim, That not any thing can be, and not be at the ſame inſtant of time; what fruitful products was there ever yet drawn from this unprofitable fundamental? neither ever hath it proceeded ſo far as to find a ſure, and ultimate reſting place, which notwithſtanding the learned *Renatus des Chartes* hath happily performed, having gone back to the very baſis of all, which is, that there is *mens cogitans*, which can no way feign, or excogitate it ſelf not to be, which is a more certain and undeniable principle than ever the Schools invented, or built upon. Renat. des Chart. de method.

3. It is of no uſe nor advantage to other Sciences, nor ever hath brought any good or profit unto the ſons of men, but onely ſeduced them into ſtrange labyrinths of notional Chymæras, and ſpeculations, like idle and vain dreams, filling and feeding the fanſie, but yielding nothing of ſolidity to inrich the Intellect, nor any thing of uſe or profit to accomodate mankind: except that may be accounted an advantage, to obſcure the truth, and lead the phantaſies of men into the crooked *Meanders* of conceit, and nutation, and ſo with the aſſiſtance of its Twin *Logick* (both ſiſters of the ſame mother *Nox*) bring men to imagine and argue much, but in truth and verity to know little.

4. If it had been able (as it proudly pretends) to have taught any thing truly and certainly of thoſe things that are *Metaphyſical*, or ſupernatural, that either are not corporeal or materiate, or elſe much tranſcend the nature of *Phyſical* bodies both Cæleſtial and Elementary, then might it juſtly be

be received, and have its due commendation. But alas! what weak, frivolous and groundleſs opinions hath it produced concerning God, Angells, ſeparate ſubſtances, and the like? not ſeeing ſo much in theſe things as the *Ethnicks*, who, in the fable of the Golden Chain, did affirm, that neither men, nor the Gods could draw *Jupiter* from heaven to the earth, but that *Jupiter* could eaſily draw men from the earth to heaven. *Quare fruſtra ſudaverit, qui Cæleſtia religionis arcana, noſtræ rationi adaptare conabitur.* Therefore he in vain ſweats, who indevours to fit the heavenly myſteries of religion to our reaſon.

Veſul. de Au Scient. lib. 3 cap. 2.

5. What ſhall I ſay of thoſe ſtrange, vain, and poiſoneus Cockatrice eggs that it hath hatched, full of nothing but uſeleſs queſtions and altercations, to as little purpoſe as the diſputes *de Lanâ caprinâ*, or Moonſhine in the Water? What ſhall I ſay of it, is it not altogether defective of all ſolid, and fruit-bearing knowledge? doth it not ſuperfluouſly abound with vanities and follies? was ever any made either wiſe or happy by it? and yet this is the *Schools* prime *Philoſophy* or *Metaphyſical* learning, which is nothing but vain opination, void of *Scientifical* demonſtration, and cleer verity. *Fateamur, rerum divinarum pauciſſimarum demonſtrationes habemus, omnia ferè opinionibus definentes. We muſt confeſs, we have the demonſtrations of very few divine things, defining all things by opinions.*

Vid. Metaphyſ. Campanel. et Pet. Gaſſend. contra Ariſt.

Aug. Alſtem. de nobil. inſtitut. lib.

In the next place comes the *Ethicks* to be conſidered of, which how fruitleſs and vain they are may appear in a few reaſons.

For 1. how can he be ſuppoſed to be the fitteſt teacher of that art, who was himſelf an heathen, and neither knew nor acknowledged God, who indeed is the *ſummum bonum*, and ſo placed felicity in fading, and momentary things, as riches, and honour: or at the beſt made but Vertue the chief good, which cannot however be happineſs it ſelf, but at the moſt but the way and means to attain it? And it muſt neceſſarily follow that he that underſtands not the real, and true end, cannot teach the indubitate means that leads to that end, and therefore muſt needs be a blind guide, eſpecially

especially to Christians, as *Lambertus Danæus* hath sufficiently manifested; and yet the Schools must needs follow, and prefer the dark Lamp of a blind *Pagan*, before the bright-shining Sun of the Prophets, and Apostles. Lamb. Dinæ. de Ethick. Christ. lib.

2. Though the Schools have disputed much of the Chief good, of vertues, and of vices, yet have they either taught nothing at all that is practicable, whereby vertue might be obtained, and vice eschewed, or felicity enjoyed, or but touched it very slenderly, perfunctorily, and unprofitably: as though it were sufficient to teach a Pilot the many dangers of his voyage in respect of tempests, storms, winds, sands, shelves, rocks, and the like, and to make a large commendation of the peace, plenty, fruitfulness, and happiness of the place to which his journey were intended; yet leave him altogether ignorant and untaught how to escape those dangers, and unfurnished with means to attain to the harbour unto which his navigation is purposed. Verulam. de Aug. Scient. lib. 7. 1.

3. They have chosen to themselves such a way, whereby the mass of *Ethical* knowledge might be set forth as a splendid and beautiful thing, bearing forth the brightness of wit, and vigour of eloquence, rather than any truth in the matter, or benefit to the readers and hearers, and so have made it facilely disputable, but difficultly practicable, seeking themselves, more than truth, or the benefit of others; as *Seneca* truly saith, *Nocet illis eloquentia, quibus non rerum facit cupiditatem, sed sui: Eloquence hurteth those, to whom it causeth not the desire of things, but of themselves:* for water is better in an Earthen vessel, than poison in a golden cup, and he that speaks truly and to profit others is to be preferred before him that speaks *Rhetorically*, and elegantly to small profit or purpose.

4. It cannot but be matter of much wonder to all ingenuous men that shall more seriously perpend, and weigh the business, why not onely the Moral *Philosophy* of *Aristotle* should take place above that which is deduced from principles of Christianity; but also why he should have therein the preheminence above *Socrates*, *Plato*, *Zeno*, and many others, who truly taught many divine and pretious things

things for the eradicating of vice, the planting of vertue, and the establishing of mental tranquillity, and moral felicity, which *Aristotle* and all his *Sectators* never either understood, or had fruition of. What shall I say of that man of men the severe *Seneca*? are not his writings about vertue, tranquillity, and curing the minds diseases, infinitely beyond all those needless, fruitless, vain and impertinent discourses of the proud *Stagyrite*? Let all that ever loved vertue and tranquillity, and have perused the one, and the other, speak, and declare their judgements: nay doth not that one little *Enchiridion* of *Epictetus* contain more pretious treasure, than all the great volumes of *Aristotle*? let vertue speak, and truth determine.

Arist. Nich. l. 1. cap. 5.

Pet. Gassend. con. Arist ex. 7.

Now for the *Political* and *Oeconomical* learning taught by the Schools out of *Aristotle*, as it hath many things of singular use, and commoditie in it, so is it not without its chaff, and tares, deserving rather purging, and refining, than the estimation of being compleat and perfect: For as there are many things in it frivolous, obscure, immethodical, superfluous, and false, so also is it very defective, and imperfect; for if we look upon what *Plato* hath written *de legibus*, and *de Republica*, though there may be found many things unpracticable, and incompleat, yet compared with the other, it is no way inferiour, but deserves as great, if not an higher commendation; and so the writings of *Bodin*, nay *Macchiavel* and divers other modern authors may duly challenge as much praise in this point, as that of *Aristotle*, which the *Schools* do so much adhere to and magnifie, yea even our own Countreyman master *Hobbs* hath pieces of more exquisiteness, and profundity in that subject, than ever the *Gracian* wit was able to reach unto, or attain; so that there is no reason why he should be so applauded, and universally received, while more able pieces are rejected, and past by.

Lastly, for *Rhetorick*, or *Oratory*, *Poesie*, and the like, which serve for adornation, and are as it were the outward dress, and attire of more solid sciences; first they might tollerably pass, if there were not too much affectation towards

towards them, and too much pretious time ſpent about them, while more excellent and neceſſary learning lies neglected and paſſed by: For we do in theſe ornamental arts, as people uſually do in the world, who take more care often time about the goods of fortune, than about the good of the body, and more nice and preciſe ſollicitouſneſs about faſhions and garbs, than either about the body it ſelf or the goods of the mind, regarding the ſhell more than the kernel, and the ſhadow more than the Subſtance. And therefore it was not without juſt cauſe that *Plato* (though by ſome cenſured for it) did reckon *Rhetorick* amongſt the voluptuary arts, for we moſt commonly uſe it either for the priding and pleaſing of our ſelves that we may appear eloquent, and learned to others, or elſe uſe it cunningly and ſophiſtically to captivate, and draw over the judgements of others to ſerve our ends and intereſts: and thereby make falſe things appear true, old things new, crooked things ſtraight, and commodious things unprofitable, as *Auguſtine* ſaith, *Imperitior multitudo, quod ornatè dicitur, etiam verè dici arbitratur*, *The more unſkilful multitude thinketh that what is ſpoken elegantly, is alſo ſpoken truly.* And therefore *Seneca* ſaith, Seeſt thou a man neat and compt in his language, then is his mind occupied in minute things.

Verul. de Au. Sci. l. 6 c. 3.

Sen. Epiſt. 115.

2. Both Eloquence and *Poeſie* ſeem rather to be numbred amongſt the gifts of nature, than amongſt the diſciplines, for thoſe which excell much in reaſon, and do diſpoſe thoſe things which they excogitate in a moſt eaſie method, that they may be clearly, and diſtinctly underſtood, are moſt apt to perſwade, although they did uſe the language of the *Goths*, and had never learned *Rhetorick*: and thoſe that are born to invent moſt ingenious figments, and to expreſs them with the greateſt elegance and ſuavity, are to be accounted the beſt *Poets*, although they are ignorant of all the precepts of the *Poetical* art; for *naſcitur, non fit poeta*; and therefore *Plato* moſt truly concludeth, *Omnes itaque carminum poetæ inſignes, non arte, ſed divino afflatu, mente capti omnia iſta præclara poemata canunt. Therefore all the famous makers of verſes, do not ſing all*

Aug. Alſt. de nobil. inſtitut.

Ren. des Char. de method.

these excellent Poems by art, but by a divine affliation, being carried above themselves.

3. Though *Aristotle* were a great Master in *Oratory*, and a very eloquent man, yet in that point might justly give the palm to his Master *Plato*, unto whom all the attributes of honour in that particular are worthily accumulated, of whom it is said, That if *Jupiter* would speak in mans language, he would speak in that of *Plato*.

Thus have I briefly run over some of the faults, and defects of *Academick* learning, but am far from having touched all, for to have done that would have reached beyond both my time, and purpose, and also mine abilities; for *Benardus non videt omnia*: yet if the Lion may be known by his paw, and *Hercules* by his foot, then I hope there is enough said to make it cleer, that the *Aristotelian*, and *Scholastick* learning, deserves not the preheminence above all other, nor those great commendations that the corruption of times, and sloathful ignorance of the most have ascribed unto it, but that a great part of it doth deserve eradication, some of it reformation, and all of it melioration, and so I proceed.

Chap. VIII.

Of their Customes, and Methode.

HAving hitherto spoken of the subjective learning that the *Schools* handle, it follows in order to examine their customes and methode, not that I mean to meddle either with their manners, or maintenance, but leave that to the judgement of others, lest it happen to me, as *Erasmus* said of *Luther*, that it was dangerous to meddle with the *Popes* Crown, and Monks bellies: but only to note some things

things in the way, and methode of their teaching, which are obvious to my weak obſervation, and ſo ſhall lay them down as they preſent themſelves to my low apprehenſion.

1. Though in one *Academy* there be uſually divers *Colleges*, or houſes, yet muſt all the Scholars in thoſe ſeveral places be tyed to one methode, and carried on in one way, nay even bound to the ſame authors, and hardly allowed ſo much liberty, and difference, as is between *Ariſtotle*, and *Ramus Logick*: As though they in the way of their teaching had arrived at the higheſt point of perfection, which could no way be improved, or no other as profitable could be diſcovered and found out, and ſo are all forced like carriers horſes, to follow one another in the accuſtomed path, though it be never ſo uneven or impaſſable.

2. Their *Scholaſtick* exerciſes are but ſlenderly, negligently, and ſloathfully performed, their publike acts (as they call them though but verbal digladiations) being but kept four times in the year, that is in the terms, which if one ſhould tell them in plain terms, are but uſually idle termes: as though time of all other things here below, were not to be accounted moſt pretious, and that there can be no ſuch detriment done unto youth, as to loſe or miſpend it.

3. Their Cuſtome is injurious, and prejudicial to all thoſe that deſire to make a ſpeedy progreſs in learning, nay unequal, and diſproportionable in it ſelf, namely to ty men to a ſet time of years, or acts, before they can receive their *Laureation*, or take their degrees: as though all were of one capacity or induſtry, or all equally able at their matriculation, and ſo the ſloathful, and painful, the moſt capable, and moſt blockiſh, ſhould both in the ſame equal time have an equal honour, which is both diſproportionable and unjuſt. For ſome will attain to more in one year than ſome in three, and therefore why ſhould they not be reſpected according to their merits and proficiency, and not bound to draw in an unequal yoak? and what matter were it whether a man had been there one moneth or ſeven years, ſo he had the qualification required, and did *ſubire examen*,

and perform the duties of the place, ſurely it is known that *gradus non confert ſcientiam, nec cucullus facit monachum.*

4. Their cuſtome is no leſs ridiculous, and vicious, in their hiſtrionical perſonations in the performance of their exerciſes, being full of childiſhneſs, and ſcurrility, far from the gravity, and ſeverity of the *Pythagorean* School where a five years ſilence was enjoined: uſing ſo much lightneſs as more befits ſtage-players than diligent ſearchers of Science, by ſcoffing and jeering, humming and hiſſing, which ſhewes them like thoſe animals they imitate, nay rather hurtful Geeſe, than labourious Bees, that ſeek to gather into their Hives, the ſweet Honey of Learning, and Knowledge.

5. What is there in all their exerciſes, but meer notions, and quarrelſome diſputations, accuſtoming themſelves to no better helps for ſearching into natures abſtruſe ſecrets than the *Chymæras* of their own brains, and converſe with a few paper Idols? as though theſe alone were ſufficient keyes to open the Cabinet of Natures rich treaſurie, without labour and pains, experiments and operations, tryals and obſervations: Surely if he that intends to prove a proficient in the knowledge of *Agriculture*, ſhould onely give himſelf over to contemplation, and reading the books of ſuch as have written in that Subject, and never put his hand to the plough, nor practiſe the way of tilling and ſowing, would he ever be a good husbandman, or underſtand thorowly what pertains thereunto? Surely not, and no more can they be good Naturaliſts that do but onely make a mold and *Idæa* in their heads, and never go out by induſtrious ſearches, and obſervant experiments, to find out the myſteries contained in nature.

6. Their cuſtome is no leſs worthy of reprehenſion that in all their exerciſes they make uſe of the *Latine* tongue, which though it may have cuſtome, and long continuance to plead its juſtification, and that it is uſed to bring youth to the ready exerciſe of it, being of general reception almoſt through the whole world: yet it is as cleerly anſwered, that cuſtome, withou

without reason and benefit, becomes injurious, and though it make them ready in speaking the *Latine* while they treat of such subjects as are usually handled in the *Schools*, yet are they less apt to speak it with facility in negotiations of far greater importance. And in the mean time, the way to attain knowledge is made more difficult, and the time more tedious, and so we almost become strangers to our own mother tongue, loving and liking forein languages, as we do their fashions, better than our own, so that while we improve theirs, our own lies altogether uncultivated, which doubtless would yield as plentiful an harvest as others, if we did as much labour to advance it: *Neque hodiè ferè ulla est natio, quæ de idiomatis sui præstantia non glorietur, aut contendat.* And therefore were the *Romans* so careful to propagate their language in other nations, and to prohibit the *Greek* language or any other to be spoken in their publike contentions: And so likewise *Pythagoras*, *Plato*, and *Aristotle* did teach in their own mother tongues, and *Hippocrates*, *Galen*, *Euclide*, and others writ in the vulgar language of their own nation, and yet we neglecting our own, do foolishly admire and entertain that of strangers, which is no lesse a ridiculous than prejudicial custome. Aug. Alst. de nobil. institut.

7. Another is no less faulty and hurtful than the precedent, and that is their too much admiring of, and adhering to antiquity, or the judgement of men that lived in ages far removed from us, as though they had known all things, and left nothing for the discovery of those that came after in subsequent ages; It was appositely said of *Seneca*, *In re maximâ, & involutissimâ, in quâ cum etiam multum actum erit, omnis tamen ætas quod agat inveniet.* *In the greatest, and most intricate thing, in which when also much is done, notwithstanding every age shall find what it may further do*; and so profoundly censures those great men that went before us, to be as our leaders, but not our masters, and so most excellently concludeth, *Multùm restat operis, multumque restabit: nec ulli nato post mille sæcula præcludetur occasio aliquid adhuc adjiciendi.* *Much work doth remain, and much will remain: neither will the occasion*

be

Verul. de Au. Scient. l. 1. et Nov. Org. lib. Aphor. 84.

be cut off to any born after a thousand ages, still of adding something. And indeed we usually attribute knowledge and experience to men of the most years, and therefore these being the latter ages of the world should know more, for the grandævity of the world ought to be accounted for antiquity, and so to be ascribed to our times, and not to the Junior age of the world, wherein those that we call the antients, did live, so that *antiquitas sæculi, juventus mundi.*

8. They usually follow another hurtful Custome not unlike to this preceding, which is too much to bind in themselves with the universality of opinions, and multiplicity of voices, as though it were not better to stand single and alone with truth, than with error to have the company of the multitude, or as though the multitude could not err, or that the greater number must necessarily be in the truth, when as the wiseman saith the number of fools are infinite, and *Aristotle* himself tells us, that though we speak as the most, yet we should think as the fewest, and *Cicero* informs us that *Philosophy* is content with a few judges, and *Seneca* most egregiously saith, *Nihil magis præstandum est, quàm ne pecorum ritu sequamur antecedentium gregem, pergentes non quò eundum est, sed quò itur: Nothing is more to be performed, than that we may not, according to the manner of cattel, follow the flock of those that went before, not following whither it ought to be gone, but whither it is gone.* And again, *Nulla res nos Majoribus malis implicat, quàm quod ad rumorem componimur, optima ratiea, quæ magno assensu recepta sunt: Nothing doth insnare us with greater evils, than that we compose our selves to rumours, supposing those things the best, which are received with great assent.*

9. Consonant to this is that other of their adhering to authority, especially of one man, namely *Aristotle*, and so do *jurare in verbi Magistri*, when according to their own tenents, arguments drawn from authority, are numbred amongst the weakest, and what could *Aristotle* know more than all other, that his opinions should be received as oracles?

he

both might and did err, as well as other mortals: And may not we as justly recede from him as he from his Master *Plato*, and the rest of the antient *Philosophers*? Is it any thing but a just liberty that we ought to maintain, and pursue, thereby to be admitted into the Court of Lady Verity? for which all chains ought to be broken, and all fetters fyled off.

10: Neither is their methode, and order in teaching any whit less vicious than the rest, for whereas *Aristotle* himself presupposeth his Auscultator or Scholar in *Physicks* to have been already trained up in the *Mathematical* Sciences (which are indeed instrumently subordinate to natural *Philosophy* as introductive thereunto) the Schools immethodically, and preposterously teach youth *Logick*, and natural *Philosophy*, not having at all tasted the very rudiments of *Mathematical* knowledge, which how much out of due order and methode, nay contrary unto it, I leave to all judicious persons to judge and consider.

CHAP. IX.

Of some expedients, or remedies in Theologie, Grammar, Logick, and Mathematicks.

I Know it will be objected, that *facile est reprehendere, it is an easie thing to find fault*, but difficult and arduous to repair and amend, and that one fool may mar, and spoil that in an hour, which many wise men cannot make right again in many ages: and the most ignorant may easily disorder, and deface the master-piece of the most curious artist,

tiſt, when he is not able to repair the leaſt part of it. And therefore that it is not ſufficient to demoliſh an antient, and goodly Fabrick, upon pretence that it is either unprofitable in the ſite, and figure, or that the materials are ruinous, and decayed; unleſs we bring better in their room, have laid a better platform, and know certainly how to erect a better Fabrick.

To which I anſwer, by a cleer confeſſion, that before we throw down we ſhould know wherewithal, and how to build, and that it is far more eaſie to demoliſh, than to erect a ſufficient and compleat Structure, and eſpecially for a ſingle perſon (and he alſo of the loweſt, and leaſt abilities) which is & ought to be the work of many, nay all perſons and ages: for as I verily believe that what I have produced for demonſtrating the groundleſneſs, ruinouſneſs, and ill compoſure of the *Scholaſtick* Fabrick of learning is not far from the truth, ſo alſo am I confident of mine inſufficiency to erect a better in the place thereof, yet *in magnis voluiſſe ſat eſt*, I ſhall do mine endeavour, hoping that thoſe that are more able will put to their hands to help to ſupply my defects, and ſo ſhall offer the beſt materials and art that I have to erect a new, and better building, and in the ſame order that I have handled the ſeveral parts.

1. Therefore for *Theology* which is a ſpeaking of God, or a ſpeaking forth the things of God, it is expedient that men ſhould lay aſide the ſuffering of themſelves to be ſtyled by that blaſphemous title of *Divines*, which is ſuch an impropriety of language as all their learning will never be able to juſtify, it being an attribute that doth onely predicate eſſentially of the being of God, and is indeed incommunicable to the Creature, who hath nothing that is divine or ſpiritual but by participation; for though the text ſaith that *Saints* are partakers of the divine nature, yet will it not follow that becauſe they are ſaid to be partakers of divine things that therefore they are divine, becauſe participations do not truly predicate of thoſe eſſences to which they are communicated, but of that being from whence they flow: for men participate of the light and heat of the Sun,

but

but it cannot be truly predicated of men that either they are the Sun, nor truly and univocally that they are of a *Solary* nature, but onely that participating of its influences and operations, they may be truly said to be heated, and inlightned: for though it be in the *English* translated *Iohn the Divine*, whereby those that understand not the *Greek* are misled, and thereby drawn to give that title to their *Priests*, who blasphemously assume it to themselves, yet I hope there is much difference betwixt Θεόλογος, and Θεῖος, one that speaks of God or divine things, and one that is divine, the *Scots* therefore have a more apposite and warrantable *Epithite*, who seldome or never call their Ministers *Divines* but *Theologues*, and we have many could cry out against the *Bishops* for having the title of Lord, or Grace given them, and yet they themselves can swallow this title of being *Divines*, which is more unseemly, unfit, and unwarrantable.

2. Another expedient that I shall offer in this case is, That the Scriptures which are as the seamless Coat of Christ may not be rent and torn with the carnal instruments of mans wit and reason, nor modell'd, or methodiz'd as an humane art or science, but laid aside in *Scholastick* exercises, as a sacred and sealed book, lest they offering strange fire upon Gods altar, perish as others have done: for in the day of mans light the Tabernacle of the Lord will be covered with a cloud, and in the night of his darkness there will be fire; therefore let not men journey until the cloud be taken up, or the fire appear, otherwise they must know the Lord doth not lead them nor go before them. And indeed, whatsoever the proud and deceitful heart of man may imagine, the Scriptures are a sealed book, for so the prophet saith, *The vision of all is become as the words of a book that is sealed, which men deliver to one that is learned, saying, Read this I pray thee: and he saith, I cannot, for it is sealed. And the book is delivered to him that is not learned, saying, Read this I pray thee, and he saith, I am not learned.* What can be more plain than this, that it is as a sealed book both to the learned, and unlearned? and this is it that is sealed

Lev. 10. 1, 2.

Exod. 40. 36, 37, 38.

Isa. 29. 11, 12.

Rev. 5. 1, 2, 3, 4, 5. with seven seals, and no man in heaven, nor earth, nor in the Sea, that is found worthy to open this book, and to unclose the seaven seals thereof, but only the strong Lion of the Tribe of *Juda*, and therefore let *Schools* not touch it, lest it be their destruction. For unless they leave the Lords own work to himself, and cease to sit in the seat of the scornful,

Psalm 1. 7. *The Lord will laugh them to scorn, and vex them in his sore displeasure*, neither will he bless them in their labours, nor prosper them in their exercises; Nay, until all the Magistrates, and Elderships of the earth that profess his name, take off their Crowns, and lay them at the feet of the Lamb, and learn to practise, and put in execution our Saviors counsel, *To give unto God the things that are Gods, and to Cæsar the things that are Cæsars*, and not at all to intermeddle with the things of God, misery and destruction will follow them to the grave, and of them shall be required the blood of all the Saints. O therefore that they would

Psal. 2. 12. *Kisse the Sonne lest he be angry, and so they perish from the way of everlasting truth: for when his wrath is kindled but a little, blessed are all they that put their trust in him.*

3. The last expedient I shall present in this subject is, That what can be discovered of God, and supernatural things, by the power of Reason, and the light of Nature, may be handled as a part of natural *Philosophy* (unto which it doth belong) because it is found out by the same means and instruments that other natural Sciences are: and what may from thence cleerly be demonstrated, and deducted, may be holden forth as a means to overthrow *Atheism*, *Gentilism*, and the like, but not to statuminate, or build up any thing in religion, nor like a wild bore to enter into the Lords vineyard to root up and destroy it.

In the next place are languages, and *Grammar*, which is the means or instrument by which they are taught, unto which I shall offer these few helps.

1. That care may be had of improving, and advancing our own language, and that arts and sciences may be taught in it, that thereby a more easie and short way may be had

had to the attaining of all sorts of knowledge: and that thereby after the example of the *Romans* we may labour to propagate it amongst other nations, that they may rather be induced to learn ours, than we theirs, which would be of vast advantage to the Commonwealth, in forrein Negotiations, Trading, Conquest and Acquisitions, and also of much domestick advantage within our own territories. For if we should arrive at any extraordinary height of learning, and knowledge, though we should but speak and write in our own mother tongue, then would other nations be as earnest in learning it, and translating our books, as former ages have been in labouring to attain the language, and translate the books of the *Græcians*, and *Romans*, and we at this day of the *French*, and *Germans*.

2. That some compendious way for both teaching and learning forein languages, may be established by use and exercise, without the tedious way of rule, or *Grammar*, which doubtless upon diligent, skilful, and exact tryal, would prove more short, easie, certain, and beneficial, as is manifest by ordinary people that never knew any thing of *Grammatical* order, being kept in families that speak another language, and having none to converse with that speaks their own, will in a wonderful short time learn to speak, and understand it; for when necessity is joined with industry, it produceth great and stupendious effects.

3. That in the way of teaching languages the order prescribed by *Comenius* in his *Janua linguarum* may be practised, and means used to improve it, that both words and matter, names and things, may be learned together, which may be done both with the same facility, and in the same shortness of time; that so the tender intellects of young children may not onely inbibe the names, but also the natures and qualities of things.

4. That in the methode of teaching *Grammar*, master *Brinsleys* way laid down in his *Grammar School* may be put into practice, that children may be taught in their mother tongue to know perfectly the several parts of Speech, declinable

clinable, and indeclinable, and punctually to vary the declinable parts, especially Noun, and Verb, and to construe and parse in their own tougue, that so they may be ready to make use, and to apply it when they learn the *Latine*, or any other language, without which they shall never have any sure foundation, nor proceed in any way of ease and certainty, nor arrive at any height of perfection, for none learns more than what the intellect clearly comprehends, and what it knows how to practise, and make use of.

5. In the *Grammatical* way of teaching it is a most certain axiom, that what is one part of speech in one language, is so in all, and four parts being indeclineable, it is manifest that they are learned by no rules, but only by use and exercise, as the memory can congest and record them: so that there remains but other four to be obtained by rule, and two of them, which is Pronoun and Participle, either are but very few, as the Pronoun, and so are easily known wherein they agree or differ from the Noun & Verb; or the Participle, which hath nothing but what agrees either with the Noun, or Verb, or with both: So that the whole difficulty is in the Noun and the Verb, of both which some are regulars, and some are irregulars, *Anomala*, defectives, or *Heteroclytes*. Now for the irregulars, the best, easiest, and shortest way were to learn them by use and exercise, without rule, which for the most part is done, and the rules usually are but superfluous, and render the way more perplex and tedious; and this being observed, the way of regulars would be facile and brief, as being but one rule for all. And this I suppose being observed would render the way of *Grammar* teaching of more bevity, facility, and certainty, but greater experiences may know better waies.

It may be imagined that I should proffer some auxiliary means for the promoting of *Symbolical*, and *Cryptographical* learning, as being a part of *Grammar*, but therein I must rather acknowledge mine inability, and onely wish that so much of it as is discovered, and made clear by others, might be put in practice, then would the benefit of it be better understood

understood by use, than I can demonstrate in words. And for the universal Character that would require a peculiar Tract, not a cursory touch: and for the language of nature, I fear it is not acquisitive but dative, and therefore shall not be so weak in that particular, to prescribe a rule, which none hath power to follow, or strength to perform.

Next in order followeth *Logick*, which being that art or Science that should administer expedients and helps for the promoting and finding out of all other Sciences, doth notwithstanding stand in need it self: from whence then should it have it? truly it is hard to determine, for it is such a groundlesse, intricate, and perplex piece, that it is very doubtful from whence it had its original, and therefore most difficult to know how to find its remedies; yet shall offer my best assistance to its regulation and amendment.

1. It is necessary that its radical ground be found forth in nature, and likewise its extent, without which it is not possible to lay open its nature and efficacy; for though it undertake to reason and argue of all things, yet bears it forth but little light and evidence of its own power and strength. And therefore in the first place it is requisite to inquire, what reason and ratiocination are in their intrinsick nature, and what they can operate, and effect, both solely by themselves, and conjunctively with the senses, because it is clear that the work of Reason is posterior to that of Sense, and doth but compound, divide, and compare the several species that are received by the senses, and make Deduction, and draw Conclusions from them, and this is necessary that its distinct power and efficacy may be known. Also it is expedient to examine wherein man in reason exceeds other animants; for though man to maintain his unjust tyranny over the other fellow creatures (excuse the phrase it is no ranting term, for *Job* confesseth, *I have said to corruption thou art my father, to the worm thou* Job 17. 14.

art

art my mother and my sister) hath assumed to himself the title of being Rational, and excluding all other living Creatures from that prerogative, when it is certain that many other Creatures excell man in the acuteness of some Senses, and it is questionable that some exceed him in Reason too, though therein he be to be preferred before the most, so that if it be diligently searched into, it will be found that there is no specifical but a gradual difference.

2. Before any great good can be effected with *Logick*, especially with the *Syllogistical* part, it will be very expedient that its principles be demonstratively cleared and proved, either in some other Science from whence they are taken, or be briefly and compendiously laid down, and defined, that they may more certainly be assented to, and the grounds known, as in the *Mathematicks*, where a few Definitions, *Petitions*, and *Axioms*, serve to demonstrate the whole operations by, with such certitude, that none since the daies of *Euclide* have denyed, or rejected them, that so by this means the Conclusions in *Logick* may be certain and profitable.

3. That some prevalent way might be found out, for discovering and rectifying the delusions and fallacies of the senses, and for drawing adæquate, and congruous notions from things, and giving apposite and significant denominations to notions, that so the fountain may be made cleer at the head, and rise of it, that all the several rivulets, and streams that run from thence may be lympid and pure, without which it will be but as a muddy puddle, whose streams cast forth dirt and myre.

4. That the chiefest and most beneficial part, which is Induction, may be improved, that it may be serviceable and helpful for the discovering of Science, which cannot be unless some carefull, diligent, and exact means be brought into practice, for the making, trying, and observing

obſerving of all ſorts of experiments, both frugiferous, and luciferous, that time may not be vainly ſpent in needleſſe altercations, diſputations, ſpeculations, and notions, but in reall, and profitable experiments, and obſervations; That ſo the end of *Logical* labour may not be to bring forth opinion, and errour, but certainty of Science, and ſolidity of truth.

The *Mathematicks* ſhould now come in order, but of them I need ſay little, as to their advance, becauſe they contain ſufficient expedients in themſelves for the progreſſe of their promotion, and indeed do want nothing but diligent and faithful proſecution, and practice, that they may arrive at a compleat period. And therefore the onely help I ſhall offer in this caſe, is, to deſire that this ſo noble, and excellent a Science, with all the parts of it, both general, and ſpecial, vulgar, and myſtical, might be brought into uſe and practice in the Schools, that men might not idlely loſe their time in groundleſſe notions, and vain *Chymeras*, but in thoſe reall exerciſes of learning that would both profit themſelves, ſucceeding generations, and other Sciences.

And I could alſo wiſh that the ſound, and *Apodictical* learning of *Copernicus*, *Kepler*, *Ticho Brahe*, *Galilæus*, *Ballialdus*, and ſuch like, might be introduced, and the rotten and ruinous Fabriek of *Ariſtotle* and *Ptolomy* rejected and laid aſide.

CHAP.

Chap. X.

Of ſome helps in Natural Philoſophy.

NOw when I come to lay down ſome expedients for the reformation and promotion of *Phyſical* knowledge, two things (I know) will be queſtioned, and inquired of.

And firſt, Whether all the whole body of the *Ariſtotelian Philoſophy* ſhould be eliminated, and thrown away.

To which I anſwer, No; for there are many things in his *Hiſtory* of *Animals*, and ſome things in his *Politicks*, *Ethicks*, *Logick*, *Metaphyſicks*, and *Rhetorick*, that are commodious and uſeful, yet do they all ſtand in need of reformation and amendment: But for his Natural *Philoſophy*, and his *Aſtronomy* depending thereon, it admits of no reformation, but eradication, that ſome better may be introduced in the place thereof. And for his Expoſitors, and Commentators, they inſtead of reforming what was amiſſe in his writings, carried with a blind zeal to make him the onely oracle of truth, have increaſed the corruption, and not ſupplyed the defects, nor removed the errours.

Secondly, it will be urged, That if the *Peripatetick Philoſophy* which the Schools maintain, ſhould be taken away, where would any ſuch perfect, compleat, and methodical piece be found to ſupply the place thereof.

To which it is anſwered, That I have already demonſtrated, and laid open the faults and defects thereof, that there is no ſuch perfection in it at all as is ſuppoſed, and therefore no inconvenience to remove it. And admit there were

were no such compleat piece, as were requisite to substitute instead of the *Aristotelian* learning being taken away, the greater were the shame of *Academies*, that within the compass of so many Centuries have done no more for the advancement of learning, for the greater the defect is, the more it ought to stir up all mens endeavours to repair, and make good the same. And also there are some pieces of *Philosophy* more compleat than *Aristotles*, as I shall shew in the following expedients.

1. It cannot be expected that *Physical* Science will arrive at any wished perfection, unlesse the way and means, so judiciously laid down by our learned Countreyman the Lord *Bacon*, be observed, and introduced into exact practice; And therefore I shall humbly desire, and earnestly presse, that his way and method may be imbraced, and set up for a rule and pattern: that no *Axioms* may be received but what are evidently proved and made good by diligent observation, and luciferous experiments; that such may be recorded in a general history of natural things, that so every age and generation, proceeding in the same way, and upon the same principles, may dayly go on with the work, to the building up of a well-grounded and lasting Fabrick, which indeed is the only true way for the instauration and advance of learning and knowledge.

2. How unfit, and unsuitable is it, for people professing the Christian Religion to adhere unto that *Philosophy* which is altogether built upon *Ethnical* principles, and indeed contrary and destructive to their tenents? so that I shall offer as a most fit expedient, that some *Physical* learning might be introduced into the Schools, that is grounded upon sensible, rational, experimental, and Scripture principles: and such a compleat piece in the most particulars of all human learning (though many vainly and falsely imagine there is no such perfect work to be found) is the elaborate writings of that profoundly learned man Dr. *Fludd*, than which for all the particulars before mentioned (notwithstanding the ignorance and envy of all opposers) the world never had a more rare, experimental and perfect piece.

3. That the *Philosophy* of *Plato*, revived and methodized by *Franciscus Patritius*, *Marsillius Ficinus*, and others; That of *Democritus*, cleared, and in some measure demonstrated, by *Renatus des Cartes*, *Regius*, *Phocylides Holwarda*, and some others; That of *Epicurus*, illustrated by *Petrus Gassendus*; That of *Philolaus*, *Empedocles*, & *Parmenides*, resuscitated by *Telesius*, *Campanella*, and some besides; and that excellent *Magnetical Philosophy* found out by Doctor *Gilbert*; That of *Hermes*, revived by the *Paracelsian* School, may be brought into examination and practice, that whatsoever in any of them, or others of what sort soever, may be found agreeable to truth and demonstration, may be imbraced, and received; for there are none of them but have excellent, and profitable things, and few of them but may justly be equallized with *Aristotle*, and the *Scholastick* learning, nay, I am confident upon due and serious perusal and tryal, would be found far to excel them.

4. That youth may not be idlely trained up in notions, speculations, and verbal disputes, but may learn to inure their hands to labour, and put their fingers to the furnaces, that the mysteries discovered by *Pyrotechny*, and the wonders brought to light by *Chymistry*, may be rendered familiar unto them: that so they may not grow proud with the brood of their own brains, but truly to be taught by manual operation, and ocular experiment, that so they may not be sayers, but doers, not idle speculators, but painful operators; that so they may not be *Sophisters*, and *Philosophers*, but *Sophists* indeed, true Natural *Magicians*, that walk not in the external circumference, but in the center of natures hidden secrets, which can never come to pass, unless they have Laboratories as well as Libraries, and work in the fire, better than build Castles in the air.

5. That the *Galenical* way of the medicinal part of *Physick* (a path that hath been long enough trodden to yield so little fruit) may not be the prison that all men must be inchained in, and ignorance, cheating and impostorage maintained by Lawes and Charters; but that the more sure, cleer

and

and exquisit way of finding the true causes, and certain cures of diseases, brought to light by those two most eminent and laborious persons, *Paracelsus*, and *Helmont*, may be entertained, prosecuted and promoted; that it may no longer be disputable whether medicine (as it stands in the common road of use and form) be more helpful than hurtful, or kill more than it cures; and whether the *Republique* of *Rome* were more happy in the health of her Subjects which wanted *Physicians* for five hundred years, than we that have them in more abundance than Caterpillers, or Horseleaches. And unless these few expedients be put in practice, we may wax old in ignorance, and never see *Physical* knowledge arrive at any height of perfection; and so I pass to the others following.

The next is *Metaphysicks*, to help which I shall only offer this expedient, that it might be reduced to some certain grounds and principles, from whence demonstrations might be drawn, that men might proceed with some certainty, and not wander in the dark they know not whither, and so that the most sure way of *Renatus des Cartes* may be brought into use, and exercise, who hath traced it unto the head of the Spring, and shaken off the loose and superfluous questions, notions, and frivolous *Chimæras* thereof: That so it might become useful and beneficial, which as it now stands, and is used (or rather abused) serves for little else but only to amuse, and amaze the understanding, to blow up the Phantasie with ayrie and empty notions, and to make men vainly and fruitlesly waste their most pretious time, which should be bestowed in things of more necessary use, and of greater concernment.

As for *Ethical* knowledge, I suppose it better taught by president and practice, than by words and precepts, for seeing vertue doth consist in action, it must of necessity be far more laudable, that men be brought up to live vertuously, than to talk and dispute of vertue, and therefore could wish it more practical and less speculative. And yet could desire that the nature of passions and affections, vertues and vices, might be more radically demonstrated, and sought into, than they

are in the Scholastick way, and therefore shall onely propose that what *Melancthon* and *Cartesius* have discovered of them, might be made documental, and practicable, and that the doctrine of them might be made more consonant to that Christian Religion which men so much profess, and glory of, and that *Seneca* and *Epictetus* might not be sleighted, and neglected, while *Aristotle* is only applauded and imbraced, betwixt whom there is no small difference.

Lastly for *Rhetorick* and *Poesie*, I shall prescribe nothing, but leave every man to the freedome of his *genius*, only to add this, that Emperours and Kings can make and create Dukes, Marquesses, and Earls, but cannot make one Orator or Poet, and so shall conclude with the *Lyrick* Poet, *Tu nihil invitâ facies, dicesve, Minervâ.*

Chap. XI.

Some Expedients concerning their Custome, and Method.

In order to the prescription of remedies concerning their Customes and Method, though (as in the rest) I cannot do what should or ought to be done in so weighty a matter, yet shall I contribute what lies in my weak power, and at least expresse my good will, if not my skill.

1. And so shall first desire that men may not be tyed up all to one method or way, lest as it may keep them in a good path, so it may hinder them from imbracing, or following a better: and it is cleer that there may be many waies to one place, and divers methods for the attaining the same end of knowledge, so as we would not exclude men from tryals that they may find out the best, so we would not ty them to any one, lest it prove the worst.

2. That above all other things care may be had that time be not misspent, or trifled away, which is an irreparable loss, and utterly irrevocable, and therefore I could wish that *Apelles* motto might be had in everlasting remembrance, *Nulla dies sine linea*; and therefore long vacations, relaxations and intermissions are to be looked upon as *Scylla* and *Charibdis*, the rocks and shelves whereon youngmen may easily suffer Shipwrack.

3. I shall tender this, that all should not be tyed to one term or time, but every one have his honour according to his industry and proficiency, that therby those that are painful may be incouraged, and those that are idle and sloggish may be ashamed: And that none may be debarred of his degree or grace, how short a time soever he hath been there, if he be but able to perform the requisites and exercises injoined, by which means merit, not years, sufficiency, not formality, shall take place and be rewarded.

4. That their exercises may not only be verbal and disputative, but practical and operative, that they may not onely be tryed what they can say, but what they can do, not only what they opinionate, but what they can perform, that as nature hath given them two hands, and but one tongue, so they may learn to work more and speak less.

5. That their exercises may be in the *English* as well as other tongues, that while they labour to make other languages familiar unto them, they become not altogether strangers unto their own: and that scurrility, and childishnesse may be laid aside, and all things performed with more sobriety and gravity.

6. That neither antiquity nor novelty may take place above verity, lest it debarre us from a more diligent search after truth and Science: Neither that universality of opinion be any president or rule to sway our judgements from the investigation of knowledge; for what matter is it whether we follow many or few, so the truth be our guide? for we should not follow a multitude to do evil, and it is better to accompany verity single, than falsity and errour with never so great a number. Neither is it fit that *Authority* (whether

ther of *Aristotle* or any other) should inchain us, but that there may be a general freedome to try all things, and to hold fast that which is good, that so there might be a *Philosophical* liberty to be bound to the authority of none, but truth it self, then will men take pains, and arts will flourish.

7. As to the order to be observed in teaching the Arts, and Sciences, doubtless there can be no better method, than leading them into the fair fields of *Mathematical* learning, which by reason of its perspicuity and certitude would so settle and season the understanding, that it would ever after be sufficiently armed to discern betwixt truth and opinion, demonstration and probability: and render it more fit and able to proceed in Natural *Philosophy*, and other Sciences, and so to proceed to the Tongues, then to *Physicks*, and so to *Logick*, *Metaphysicks*, and the like, which order without question, would prove more advantagious, than that which the Schools have pursued for so many years with so little fruit. And these are the Expedients that for the present I have to present, hoping they may be acceptable until better be found out; and if any thing herein may appear to be erroneous, let it be but candidly made manifest, and he will be willing either to give further satisfaction, or to reclaim his mistakes, who in these things judgeth himself but as the meanest of men, and so no way privileged from frailty and infirmity.

FINIS.